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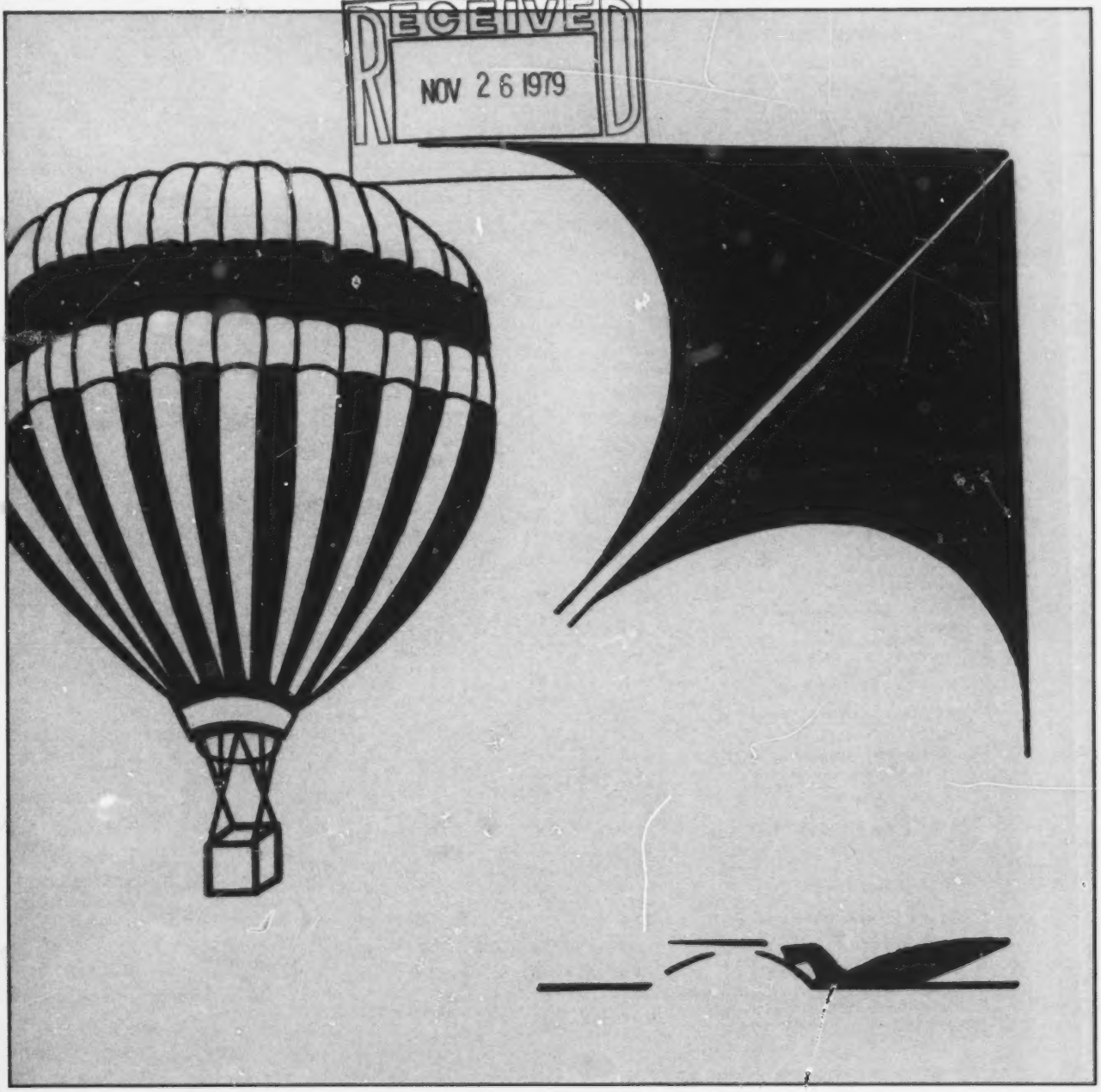

Sports Hazards
Life Expectancy Among Diabetics in the United States
Regional Variations in Mortality from Accidents
Geographic Variations in Work Disability
Employment and Fertility Among Married Women

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FATALITIES IN SPORTS

United States, 1970-78

Type of Sport	Approximate Number of Participants in 1978	Number of Deaths 1970	1971	1972	1973	1974	1975	1976	1977	1978
Aerial acrobatics (professional)	360	0	0	0	0	0	1	0	0	1
Air show/air racing and acrobatics*										
Closed course and drag racing	300									
Competitive acrobatics	600	NA	11	2	3	3	1	9	5	NA
Air show	150									
Amateur/home built aircraft flying*	8,000	13	13	22	31	38	23	41	20	NA
Bicycle racing (registered)	9,800	3 in 1970-78								
Bobsledding										
Racing	200	0	0	0	0	0	0	0	0	0
Non-racing	250	0	0	0	0	0	0	0	0	0
Boxing (professional)†	5,500	NA	NA	NA	NA	NA	2	3	1	4
Football										
Sandlot	1,000,000	3	2	3	2	0	1	3	1	0
Pro and semipro	1,500	0	0	1	0	0	0	0	0	0
High school	1,000,000	23	15	16	7	10	13	15	8	9
College	40,000	3	3	2	0	1	1	0	1	0
Free style skiing (professional)	200	0	0	0	0	0	0	0	0	0
Glider flying*	18,000	7	10	6	6	4	8	8	7	NA
Hang gliding	20,000-60,000	0	2	4	9	40	32	38	18	26
Ice yachting										
Racing	500-1,000	0	0	0	0	0	0	0	0	0
Non-racing	4,000-5,500	2 in 1970-78								
Lighter-than-air flying*‡	3,000	3	0	0	1	8	1	6	2	NA
Mountaineering	60,000	16	35	49	36	26	19	53	32	42
Power boat racing	6,500	5	5	5	5	5	5	5	7	5
Precision and stunt driving (professional)										
Automobile precision	100					NA				
Automobile stunt	100					NA				
Motorcycle jump	10	0	0	0	0	1	0	0	0	0
Other motorcycle stunt	75					NA				
Professional stunting	200	4 in 1975-78								
Rodeo										
Professional cowboy	4,200	1 in 1970-78								
Clowning	100	0	0	0	0	0	0	0	0	0
Trick riding	50-100	0	0	0	0	0	0	0	0	0
Amateur cowboy	30,000	2 in 1970-78								
Scuba diving (non-professional)	300,000	109	113	121	119	141	131	147	NA	NA
Ski racing										
Amateur	80,000	2	2	2	2	2	2	2	2	2
Professional downhill	800									
Spelunking (cave exploration)	10,000	1	0	0	0	0	3	0	0	0
Sport parachuting	25,000	29	38	35	44	32	41	54	49	48
Thoroughbred horse racing	1,800	0	2	1	3	7	4	2	0	4

*Participants include only FAA certificated pilots.
†Deaths include amateurs and professionals.
‡Deaths include some passengers and crew.
NA: Not available.

Source of basic data: Federal and state government agencies; local, regional, and national organizations and clubs; amateur and professional participants; general and specialized magazines and newspapers; specialized casualty insurance companies; certain universities; journalists and writers; and books.

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Sports Hazards

Amateur and professional sports enjoy great popularity in the United States. Most of these sports present no major hazard to participants when reasonable safety precautions are observed, but some do involve a significant degree of risk. It is difficult to measure relative hazards, however, because of the lack of official records on participation and fatal injuries.

The Statistical Bureau of the Metropolitan Life Insurance Company has collected such information as is available from a variety of sources, such as government agencies, unions, clubs, schools, and professionals in the field. These data are of varying reliability—ranging from personal impressions of individual participants to the precise and accurate records of some of the regulatory agencies—but provide some indication of the risks involved. The table on the opposite page presents information on fatalities and estimated participation in the various sports included in this review.

Approximately 360 performers in the United States are engaged in aerial acrobatics. Among them are high-pole balancers, jugglers, tumblers, trapeze artists, tightrope walkers or riders, etc. These aerialists are usually professionals or, in a few cases, highly qualified nonprofessionals. Despite the hazardous nature of such activities, there were only two deaths recorded in the 1970-78 period. The fact that aerialists are superbly trained and usually operate under optimum safety conditions may account for the low number of fatalities. However, many nonfatal but serious and disabling falls have been reported.

There are several types of flying that have become popular sports, and because these activities are federally regulated, official statistics are usually compiled. The number of fatalities in closed-course air racing (racing around pylons), drag racing, air show or stunt flying, and competitive acrobatic flying were obtained from the National Transportation Safety Board. The number of participating pilots had to be obtained from non-governmental sources, however, because government figures were not readily available at the time of review. Although there are only about 1,050 pilots engaged in these types of flying—and there may be fewer because some pilots participate in more than one activity—there were 34 deaths during the period from 1971 to 1977.

Amateur/home-built aircraft are constructed by pilots (all of whom are FAA certificated) either from commercially available kits, or from material and equipment obtained piecemeal from private or non-commercial sources. The number of participants using such aircraft increased from 4,000 to 8,000 in the 1970-77 period, but 13 to 41 pilot deaths annually indicate a significant hazard. Included in the pilot deaths were three co-pilots and two student pilots. There were 24 passenger deaths in such aircraft during this period.

Glider flying fatalities and pilot participation are both very accurately reported and recorded. About 18,000 pilots currently fly gliders, an increase of 7,000 since 1970. in 1970-77, pilot deaths averaged about seven per year and in-

cluded one student pilot; there were six passenger fatalities. Although gliders are flown mostly for pleasure, there is a considerable amount of instructional, commercial, and business flying. Two thirds of all glider pilots are also certified to fly other aircraft.

Hang gliding as a sport had its inception in 1971-72. Today there are 20,000 to 60,000 participants. Although statistics are compiled with great care, the deaths are thought to be somewhat understated, particularly in 1977 and 1978 when a collecting error occurred. The large number of fatalities—ranging from two in 1971 to 40 in 1974—reflects the extremely rapid increase in participation in hang gliding. There were two deaths among females in 1976.

The craft used in lighter-than-air flying are hot air balloons, gas (helium) balloons, and blimps. Hot air balloons are the most popular because they are lower priced and cost less to operate than either gas balloons or blimps. Blimps, which are small nonrigid airships, are engine driven and steerable. They are used exclusively for commercial purposes. Currently, there are about three blimps and 20 blimp pilots in the United States with an excellent safety record. Of the 21 fatalities recorded for all lighter-than-air flying, five occurred in gas balloons during three attempts to cross the Atlantic Ocean.

The worst disaster in sport parachuting occurred in 1967 when 16 jumpers drowned in Lake Erie after a mass jump. That one accident brought the death toll for the year to 46, considerably above the annual average of 30 fatalities that had prevailed. The average number of fatalities each year has increased to about 47, due it is believed to increased participation. As shown below, those with the least experience have had the highest number of deaths in recent years.

Number of Jumps	Deaths 1973	1974	1975
1- 24	14	15	14
25- 74	7	4	7
75-199	8	2	10
200 or more	15	9	10
Unreported	0	2	0

Power boat racing is a popular water sport. About 6,500 compete in regattas in which 10 major types of boats are used. Speeds may reach 160 miles per hour and it is these high speeds that contribute to the hazards. About five deaths a year were recorded in the 1970-78 period.

A survey conducted in 1972 by the United States Department of Commerce estimated that the number of scuba divers in the United States ranged from 375,000 to 2,300,000. This wide variation illustrates the difficulty of obtaining participation figures for a sport that is accessible to anyone in myriad locations. A more conservative estimate puts the participation figure at 300,000 for non-professional scuba divers. Fatalities of well over 100 per year indicate that there are substantial hazards in scuba diving. Most of the deaths have been attributed to lack of skill or training, poor physical condition, carelessness, or faulty equipment. About 60 percent of the deaths occur among males aged 16 to 30, and the majority of the fatalities take place in the states of Florida, California, and Washington.

Several of the winter sports—skiing, bobsledding, and ice yachting—present some degree of hazard. About 200 professionals participate in free style skiing (also called stunt skiing or hot-dogging) competition. Included are at least 100 active professionals and a smaller number of student professionals. Participation by unqualified skiiers is not permitted on any slope policed by the ski patrol and is strongly discouraged on any other remote or secluded slope, even when it is properly snow packed and laid out. However, some unqualified free style skiiers often perform secretly, making it difficult to estimate participation. There were no fatalities in this type of skiing in the period 1970-78.

Participating in downhill ski racing are about 80,000 amateurs and 800 professionals. Downhill ski racers can achieve speeds of more than 100 miles per hour. Although such speeds are generally restricted to the professionals, some amateurs may be proficient enough to attain them. Two deaths per year have been reported in each of the nine years reviewed.

The bobsled run at Lake Placid in New York State appears to be the only one in the Western

Hemisphere. About 200 bobsledders compete in races, while 250 are non-racing participants. Because of the high speeds (usually about 55 miles an hour) in bobsledding, a high degree of skill and ability is necessary, which probably helps to account for the low level of participation. The last recorded death was that of a foreign racer at Lake Placid in 1968.

Ice yachts have attained world record speeds of over 140 miles per hour, and speeds of 80 miles per hour are the norm. There were no deaths among the 500 to 1,000 that competed in races during the nine-year period under review. There were two deaths among the non-racing participants in this period.

Statistics on precision and stunt driving are difficult to find and are often inaccurate. Precision driving is considered much less hazardous than stunt driving. About 300 professionals, all of whom are highly skilled, are engaged in these activities. Fatality figures are not available in most cases, but there was one death among the 10 drivers who compete in the motorcycle jump.

Professional stunt people generally replace movie and television performers when a scene presents actual physical danger Some of those engaged in stunting may perform in several types of hazardous activities, and are usually highly competent. There were four fatalities among the estimated 200 participants in 1975-78.

Another type of exciting sports competition takes place at rodeos. The official events in a rodeo include bareback bronc riding, calf roping, saddle bronc riding, steer wrestling, bull riding, team roping, and steer roping. In addition, there may often be clowning, trick riding, and wild horse racing. Clowning is used primarily to distract the attention of bulls while a fallen rider runs to safety. While many of the events in a rodeo can be extremely dangerous, the fatality experience has been good. During the nine-year period of review, there were no deaths in the clowning and trick riding categories, one among professional cowboys, and two among amateur cowboys.

About 10,000 people participate in spelunking or cave exploration. A small number of them are speleologists or scientific cave explorers but for most it is a hobby. Fatalities in this activity have been attributed to a variety of causes, such as falls, drowning, exposure, and cave-ins. The three deaths that occurred in 1975 were due to drowning during a flash flood, while the one death in 1970 resulted from exposure. Fatalities in underwater caves are included under scuba diving.

Of the estimated 60,000 mountain climbers in the United States, between 2,000 and 10,000 are serious climbers. The number of mountaineering fatalities shown in the table are those that have been officially reported. Additional fatalities are known (from reports in newspapers and magazines) but these have not been included. There were 308 deaths recorded in the 1970-78 period, with the annual death toll ranging from 16 to 53 among mountain climbers of all levels of skill and experience.

The safety record in professional and semi-professional football has been good in the nine years under review, with one death recorded in 1972. Among college footballers there were 11 deaths in this period, while sandlot players suffered 15 deaths. However, fatalities among high school football players were high, totaling 116 in the same period.

Although relatively few deaths occur in the professional boxing ring, there were four in the United States in 1978. However, the long-term adverse effects of boxing on the central nervous system, the head, and the kidneys may be of greater concern. About 5,500 compete in the ring, and several women have recently made their appearance as professional boxers.

Bicycle racing, an activity available to most cyclists, has many participants. The table on page 2, however, shows statistics for only the 9,800 nationally registered professional racers. There were three deaths in this sport in the 1970-78 period.

Fatality statistics for thoroughbred horse racing appear to be reasonably accurate. During the 1974-78 period, the death rate from all types of accidents in the United States general population was .48 per 1,000; the fatality rate among jockeys was 1.7 per 1,000 jockeys. A jockey is exposed, therefore, to an additional hazard to his life that is between 3 and 4 times greater than that for the total population.

Life Expectancy Among Diabetics in the United States

Advances in the treatment of diabetes and its complications have resulted in a considerable reduction in mortality and a consequent improvement in longevity among diabetics. Because of a lack of comprehensive mortality and prevalence data in the past, life tables for the diabetic population were not prepared. However, the availability of mortality data from multiple cause-of-death coding and prevalence data from the National Health Interview Survey now permits an alternative method of estimating the mortality rates and survival patterns among diabetics in the United States.

As the sixth leading cause of death in the United States, diabetes accounts for about 38,000 deaths a year. However, deaths ascribed to diabetes as the principal cause of death represent only a portion of the deaths among persons with the disease. The present system of selecting a single underlying cause of death in tabulating mortality statistics excludes deaths from diabetes when mentioned as a contributory cause on the death certificate. As an associated or contributory cause of death, diabetes is believed to be responsible for a considerable proportion of the deaths among diabetics that are attributed to other diseases, particularly those of the cardiovascular-renal system.

Studies of all conditions (both underlying and contributory) listed on death certificates in 1972-

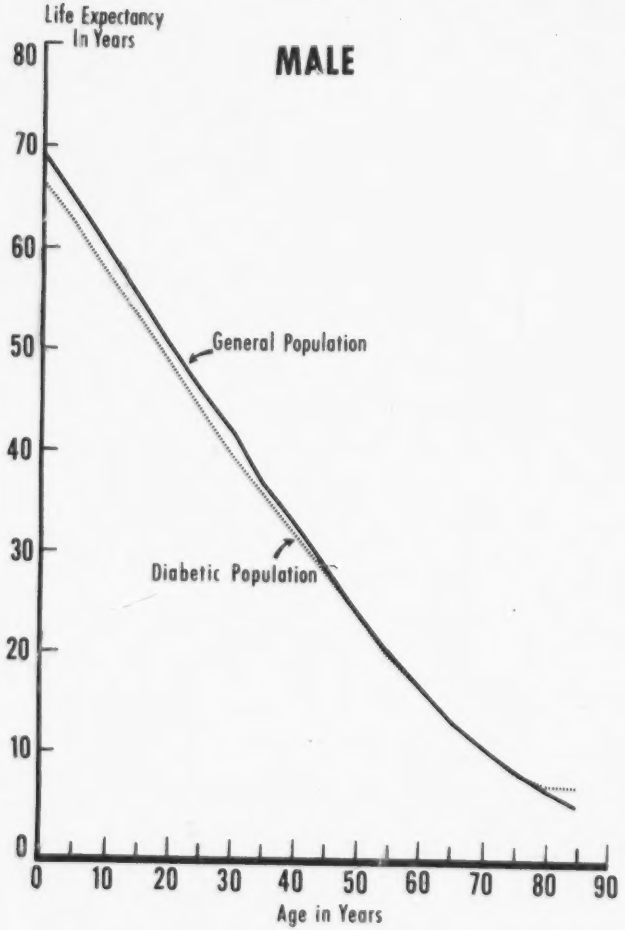
EXPECTATION OF LIFE AMONG DIABETICS

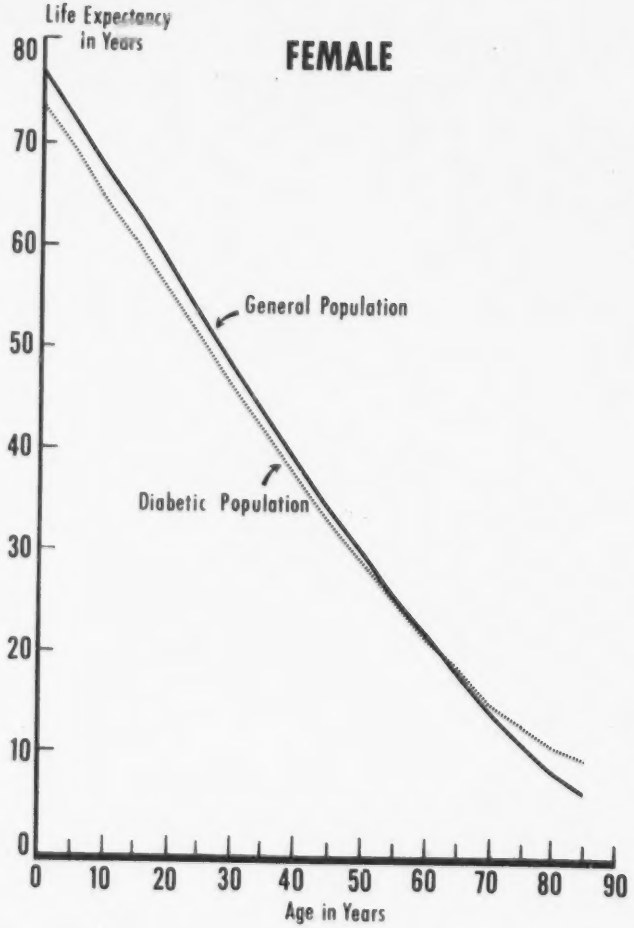
United States, 1976

Age (Years)	Diabetic Males		Diabetic Females	
	Proportion Dying	Average Number of Years of Life Remaining	Proportion Dying	Average Number of Years of Life Remaining
0- 5	0.0215	66.6	0.0172	73.7
5-15	.0050	63.0	.0034	70.0
10-15	.0053	58.4	.0064	65.2
15-20	.0052	53.6	.0026	60.6
20-25	.0114	48.9	.0077	55.8
25-30	.0150	44.4	.0076	51.2
30-35	.0281	40.1	.0168	46.5
35-40	.0245	36.2	.0121	42.3
40-45	.0413	32.0	.0179	37.8
45-50	.0364	28.3	.0247	33.4
50-55	.0547	24.2	.0442	29.2
55-60	.0754	20.5	.0506	25.4
60-65	.1111	16.9	.0979	21.6
65-70	.1619	13.7	.0967	18.7
70-75	.2441	10.9	.1694	15.4
75-80	.3975	8.5	.2303	13.0
80-85	.4848	7.6	.2938	11.1
85-	1.0000	7.4	1.0000	9.7

Estimated Expectation of Life

Diabetic vs. General Population
United States, 1976





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73 in Iowa[1] and in 1968-69 in Pennsylvania[2] indicated that only about one quarter of the deaths among diabetics were attributed to diabetes as the principal or underlying cause of death. A similar study in 1955 by the United States Vital Statistics Office[3] showed that diabetes was classified as the underlying cause of death in about 40 percent of the cases. The multiple cause-of-death coding used in these studies provides the basic mortality data needed to compute a life table for diabetics.

The Statistical Bureau of the Metropolitan Life Insurance Company has constructed an abridged life table for the diabetic population of the United States, using mortality data obtained from the National Center for Health Statistics. These data were adjusted to reflect estimates of the true mortality among diabetics, using ratios derived from the results of the Iowa, Pennsylvania, and United States studies of all conditions listed on death certificates. The diabetic population of the United States was estimated from the findings of the 1973 survey of diabetics in the United States.[4] The expectation of life for diabetic males and females and the probability of dying are shown in the table on page 6.

The estimated expectation of life at birth is 66.6 years for male diabetics and 73.7 years for females. At age 20, male diabetics can expect to live on the average an additional 48.9 years, and females another 55.8 years. On reaching age 40, the average remaining lifetime is 32.0 years for males and 37.8 years for females. Average life expectancy among male diabetics is 16.9 years at age 60 and 7.6 years at age 80; the corresponding life expectancy for female diabetics is 21.6 and 11.1 years, respectively.

The average life expectancy among diabetic females is substantially higher than that for diabetic males. The sex differential is greatest at birth—7.1 years—but narrows somewhat to 6.9 years at age 20 and to 5.8 years at age 40. The disparity continues to decline with age, from 4.7 years at age 60 to 3.5 years at age 80. By age 85, there is only 2.3 years difference in the average life expectancy of diabetic men and women. The lower life expectancy among diabetic males can be attributed in great part to the large proportion of deaths from cardiovascular diseases among male diabetics.

A comparison of the estimated life expectancy of diabetics in the United States with that of the general population in 1976 is presented in the charts shown on page 7. In general, the estimated expectation of life among diabetics is considerably lower than the average life expectancy of the general population, with large differences at the early ages—2.4 years at birth for males and 3.0 years for females—but decreasing with advance in age. Between ages 45 and 80, average life expectancy is slightly higher among males in the general population, but thereafter becomes slightly more favorable for the diabetic population. Prior to age 65, the estimated life expectancy is generally higher among females in the general population; at ages 65 and over, however, life expectancy among diabetic females is markedly higher. The greater life expectancy among diabetics at the older ages suggests that diabetes at these ages has little effect on longevity; genetic factors may be more important in advanced age.

In addition to the significant underreporting of deaths from diabetes arising from single cause-of-death coding, there is also some degree of understatement that occurs when diabetes is omitted entirely. The Pennsylvania study[2] estimated that about 7.6 percent of all death certificates failed to show diabetes as either an underlying or contributory cause of death in cases where the deceased had actually been diabetic. This can affect life expectancy estimates. The findings of the Iowa[1] study indicate that 1 percent of underreporting results in a reduction of about a year and a half in the life expectancy of diabetics. The expectation of life figures shown in the table may, therefore, represent optimum survival among diabetics in the United States.

[1]Bale GS, Entmacher PS: Estimated life expectancy of diabetics. Diabetes 26:434-438, 1977.

[2]Tokuhata GK, Miller W, Digon E, et al: Diabetes mellitus: An underestimated public health problem. J Chronic Dis 28:23, 1975.

[3]Vital Statistics of the United States, 1955, Supplement: Mortality Data. Washington DC, National Center for Health Statistics, Dept of Health, Education, and Welfare, 1965.

[4]Prevalence of Chronic Conditions of the Genitourinary, Nervous, Endocrine, Metabolic, and Blood and Blood-Forming Systems and of Other Selected Chronic Conditions, United States-1973. DHEW Publication No 77-1536, Ser 10, No 109. Washington DC, Health Resources Administration, Dept of Health, Education, and Welfare, 1977.

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Regional Variations in Mortality from Accidents

Mortality from accidents varies appreciably from one area of the United States to another. Since 1970, however, there has been a substantial decline in such fatalities in every geographic division of the country. The table on page 10 presents details of the mortality from some of the major types of accidents, by state of residence and geographic division, in 1977—the latest year for which official figures are available.

The Mountain division registered the highest accident death rate—64.2 per 100,000 population—which was more than a third higher than the rate of 47.7 per 100,000 for the country as a whole. Fatality rates exceeded 65 per 100,000 in six of the eight states in this division, and in two states—Wyoming and New Mexico—were above 75 per 100,000. The highest accident death rate among all the states, however, was that recorded in Alaska—96.4 per 100,000. The high rate from all accidents in this state has been attributed mainly to extremely high mortality from accidents other than those involving motor vehicles.

The lowest accident death rates, 35.6 per 100,000 in the Middle Atlantic States and 36.2 in New England, were about a quarter below the national average. Of the eight states with death rates of less than 40 per 100,000, six were in the Northeast, one in the South, and one in the West. The state of Hawaii, with an accident death rate of 29.5 per 100,000, had the most favorable experience.

The geographic pattern for all types of fatal accidents reflects in large measure regional variations in mortality from motor vehicle accidents. In the Mountain States, the death rate from motor vehicle accidents in 1977—35.1 per 100,000—was about 50 percent above the national average of 22.9, and more than twice the rate of 15.4 recorded in the Middle Atlantic and New England areas. Fatality rates from such accidents reached 49.5 in Wyoming and 47.1 in New Mexico. The lowest death rates from motor vehicle accidents were recorded in the District of Columbia (12.7) and New York (13.8).

Mortality from motor vehicle accidents involving pedestrians showed a somewhat different geographic pattern. Death rates varied from a low of 2.7 per 100,000 in the West North Central area to a high of 5.3 in the Mountain division. However, Arizona and New Mexico recorded pedestrian mortality that was more than double the national average of 3.6 per 100,000, and rates of 5.0 or more were registered in Alaska, Florida, South Carolina, and the District of Columbia. On the other hand, a fatality rate of 1.8 was reported in Iowa and Kansas, and in three states—Vermont, North Dakota, and Wyoming—there were fewer than 20 such deaths. Pedestrian deaths accounted for 16 percent of the fatalities from motor vehicle accidents in the country at large, for 39 percent in the District of Columbia and 27 percent in New York, but for only 7 percent in Kansas and Montana.

The mortality from all accidents except those involving motor vehicles accounted for slightly more than half of the total accident fatalities in the nation, and for about 45 percent in the Mountain division, and 57 percent in the New England and Middle Atlantic States. Six of the nine geographic divisions recorded fatality rates above the national average of 24.8 for such accidents, but three—the New England, Middle Atlantic, and East North Central States—had somewhat lower rates. Among the states, fatality rates ranged from 13.5 in Hawaii to 66.6 in Alaska. In the District of Columbia and Alaska, accidents other than motor vehicle accidents were responsible for about 70 percent of all accidents, due largely to the high mortality from falls and fires in the District of Columbia, and to the high level of fatalities from drowning and from air and water transportation accidents in Alaska.

MORTALITY FROM SELECTED TYPES OF ACCIDENTS BY GEOGRAPHIC DIVISION AND STATE, 1977

Area	Death Rate per 100,000 Population								Percent Change 1970 to 1977	
	All Accidents	Motor Vehicle Accidents		Total Excluding Motor Vehicle	Falls	Fires and Flames	Drowning*	Firearms	Motor Vehicle	Total Excluding Motor Vehicle
		Total	Pedestrian							
United States	47.7	22.9	3.6	24.8	6.4	2.9	2.8	0.9	−15	−16
New England	36.2	15.4	3.1	20.8	7.9	2.3	2.0	.3	−14	−22
Maine	40.8	17.6	2.7	23.2	7.2	3.4	2.7	†	−27	−29
New Hampshire	38.2	17.8	2.8	20.4	5.5	2.6	2.4	†	−34	−25
Vermont	45.2	21.0	†	24.2	8.9	†	†	†	‡	−15
Massachusetts	36.7	14.2	3.4	22.5	9.6	2.2	2.0	†	−17	−23
Rhode Island	38.3	17.0	3.8	21.3	7.3	2.3	2.5	†	+24	− 7
Connecticut	31.1	15.0	2.6	16.1	5.5	1.7	1.8	†	− 5	−24
Middle Atlantic	35.6	15.4	3.5	20.2	6.8	2.4	1.6	.4	−18	−12
New York	32.0	13.8	3.7	18.2	6.4	1.9	1.5	.4	−23	−11
New Jersey	33.7	14.8	3.4	18.9	6.8	2.6	1.5	.3	−19	−20
Pennsylvania	42.3	18.2	3.2	24.1	7.6	2.9	1.8	.5	−11	− 9
East North Central	42.7	20.3	3.0	22.4	6.3	3.0	2.2	.6	−18	−15
Ohio	40.2	17.4	2.5	22.8	7.0	3.0	1.7	.6	−29	−16
Indiana	48.6	24.4	2.2	24.2	6.4	3.1	2.4	.7	−18	− 9
Illinois	42.7	19.8	3.2	22.9	5.6	3.1	2.5	.6	−10	−14
Michigan	43.2	21.9	3.8	21.3	6.1	3.2	2.5	.7	−15	−13
Wisconsin	40.8	20.4	2.6	20.4	6.3	2.0	2.0	.5	−17	−27
West North Central	50.1	24.3	2.7	25.8	7.9	2.7	2.1	.9	−20	−18
Minnesota	46.4	22.4	3.4	24.0	7.5	2.5	1.9	.6	−18	−16
Iowa	46.1	22.8	1.8	23.3	8.5	2.3	2.0	.9	−30	−18
Missouri	51.4	24.6	3.2	26.8	7.6	3.3	2.1	.7	−20	−20
North Dakota	59.1	29.4	†	29.7	8.3	3.1	†	†	‡	−11
South Dakota	64.5	31.1	3.3	33.4	7.6	3.2	†	3.5	−16	− 3
Nebraska	51.0	23.9	2.2	27.1	8.4	2.4	2.0	†	−21	−23
Kansas	51.5	25.3	1.8	26.2	7.9	2.4	2.5	†	−16	−15
South Atlantic	51.9	24.6	4.3	27.3	6.1	3.7	3.8	1.2	−20	−18
Delaware	41.2	19.8	3.4	21.4	4.1	†	†	†	−31	−23
Maryland	36.9	16.5	3.3	20.4	5.7	2.7	2.8	†	−21	−25
District of Columbia	45.5	12.7	5.0	32.8	11.7	5.3	†	†	−44	−30
Virginia	51.1	23.4	3.6	27.7	7.2	3.9	3.1	1.1	−10	−10
West Virginia	57.2	27.1	2.5	30.1	6.6	4.1	3.7	†	−12	−25
North Carolina	56.2	26.1	4.6	30.1	5.3	4.6	4.0	1.5	−23	− 7
South Carolina	62.8	33.1	5.1	29.7	4.5	5.1	4.6	2.0	−13	−15
Georgia	60.3	28.9	3.8	31.4	6.0	4.3	4.0	2.3	−25	−11
Florida	48.4	23.7	5.3	24.7	6.2	2.4	4.3	.7	−24	−27
East South Central	62.4	30.2	3.4	32.2	6.2	5.5	3.8	2.0	−18	− 8
Kentucky	61.9	27.2	3.0	34.7	7.6	6.2	3.0	1.7	−16	− 4
Tennessee	57.4	28.7	3.2	28.7	6.0	4.7	3.6	1.5	−20	− 7
Alabama	66.7	33.7	3.7	33.0	5.7	5.6	4.1	2.1	−13	− 8
Mississippi	65.7	31.9	3.8	33.8	5.4	5.7	4.6	3.1	−23	−16
West South Central	56.2	28.3	3.8	27.9	5.3	3.2	3.9	1.7	−11	−16
Arkansas	55.3	25.5	3.0	29.8	6.2	4.0	3.7	2.0	−18	−22
Louisiana	61.5	27.2	3.9	34.3	5.3	4.1	4.9	2.7	−16	− 4
Oklahoma	60.0	31.9	3.1	28.1	5.1	3.4	2.8	1.5	+ 3	−24
Texas	53.9	28.3	4.0	25.6	5.3	2.7	3.8	1.4	−12	−17
Mountain	64.2	35.1	5.3	29.1	7.2	2.1	3.1	1.3	− 7	−16
Montana	74.5	38.9	2.7	35.6	8.6	3.5	3.7	3.0	− 9	− 8
Idaho	74.2	36.7	4.3	37.5	5.8	2.8	4.9	†	−16	− 4
Wyoming	85.2	49.5	†	35.7	6.7	†	†	†	− 3	−27
Colorado	52.8	26.9	3.4	25.9	7.8	1.4	1.7	1.2	− 9	−10
New Mexico	76.3	47.1	7.3	29.2	5.7	2.4	2.9	†	‡	−31
Arizona	67.1	38.8	8.6	28.3	7.4	2.5	3.8	1.0	− 3	−21
Utah	50.8	26.2	4.6	24.6	8.0	1.7	2.0	†	−14	−11
Nevada	65.6	34.4	4.1	31.2	6.1	†	5.0	†	−15	− 9
Pacific	49.5	24.6	3.9	24.9	5.3	2.0	3.1	.7	− 9	−23
Washington	54.9	26.8	3.1	28.1	6.6	2.5	3.5	.6	− 1	−15
Oregon	57.7	28.5	3.9	29.2	6.8	2.9	4.2	.8	−18	− 8
California	47.6	24.1	4.0	23.5	5.0	1.8	2.7	.7	− 8	−27
Alaska	96.4	29.8	5.8	66.6	5.8	6.8	9.9	†	−14	−19
Hawaii	29.5	16.0	3.8	13.5	2.9	†	3.6	†	−10	−25

*Excludes water transportation.

†Fewer than 20 deaths; rate not computed.

‡Less than 0.5 percent.

Note: Deaths are reported according to state of residence rather than state of occurrence of the accident.

Source of basic data: Unpublished data from the Vital Statistics Division, National Center for Health Statistics.

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Mortality from specific types of accidents also varied from one area to another, but the pattern was different from that for motor vehicle accidents. Death rates from falls were highest in the New England and West North Central divisions, and lowest in the West South Central and Pacific States. Inasmuch as the aged account for most of the fatalities from falls, the geographic variations in mortality from such injuries reflect to some extent differences in the proportion of older people living in the various states. By far the highest fatality rate from falls was reported in the District of Columbia, where the rate of 11.7 was nearly double the national rate of 6.4. High rates were also recorded in Massachusetts (9.6), Vermont (8.9), and Montana (8.6). The lowest fatality rate—2.9 per 100,000—was registered in Hawaii. Relatively low rates also prevailed in Delaware (4.1) and South Carolina (4.5).

In contrast to the mortality from falls, the highest death rates from fires and flames were recorded in the South, with rates greater than 5.0 per 100,000 in Kentucky, Mississippi, Alabama, the District of Columbia, and South Carolina. Alaska, however, recorded the highest rate in the nation (6.8). Only Alaska, South Carolina, and Mississippi experienced higher mortality from fires and flames than from falls.

Mortality from drowning was generally highest in the South and lowest in the Northeast, but death rates varied within a fairly narrow range throughout the country. In Alaska, however, the extremely high death rate of 9.9 per 100,000 was more than three and a half times the national average.

Firearms were responsible for about 2 percent of the fatalities from accidents in the United States. Mortality from such accidents was less than 1 per 100,000 population for the nation as a whole, but the death rate in South Dakota (3.5) was almost four times the national average, and the rates in Mississippi (3.1) and Montana (3.0) were more than three times the national average.

As shown in the last two columns of the table, the mortality from accidents has been declining. Between 1970 and 1977, the nationwide death rate from motor vehicle accidents decreased by 15 percent, with lower mortality in all but two states (Rhode Island and Oklahoma). The largest decrease (20 percent) occurred in the South Atlantic and West North Central areas, while the smallest declines were recorded in the Mountain and Pacific geographic divisions. Death rates declined by 30 percent or more in Iowa, Delaware, and New Hampshire, and a 44-percent reduction was noted in the District of Columbia.

During the same period the death rate from accidents other than those involving motor vehicles declined by 16 percent, with decreases of more than 20 percent in the Pacific and New England areas and of less than 10 percent in the East South Central division. The most substantial reductions in mortality were recorded in New Mexico (31 percent) and the District of Columbia (30 percent).

Correspondence relating to this publication may be addressed:

THE EDITOR, STATISTICAL BULLETIN
Metropolitan Life Insurance Company
One Madison Avenue, New York, N.Y. 10010

Please notify us promptly of any change of mailing address.

WORK DISABILITY IN THE UNITED STATES

By Geographic Division and State, 1976

Percent with a Work Disability

Area	Male				Female			
	Total	Able to Work Regularly	Unable to Work Regularly	Unable to Work at All	Total	Able to Work Regularly	Unable to Work Regularly	Unable to Work at All
United States	13.3%	6.7%	1.4%	5.1%	13.3%	4.9%	2.1%	6.4%
New England	11.0	6.4	1.0	3.7	11.5	4.4	1.8	5.3
Maine	14.1	7.2	1.7	5.3	13.3	4.9	2.5	5.8
New Hampshire	11.9	7.2	1.2	3.5	10.8	4.4	1.6	4.8
Vermont	13.8	7.5	1.2	5.1	12.3	5.0	1.9	5.4
Massachusetts	10.3	6.0	.8	3.6	11.3	4.1	1.9	5.3
Rhode Island	12.4	6.8	1.3	4.4	13.4	5.2	2.0	6.2
Connecticut	10.1	6.3	.8	3.0	10.8	4.7	1.4	4.8
Middle Atlantic	11.6	5.6	1.3	4.8	12.0	4.1	1.7	6.2
New York	10.8	4.5	1.2	5.0	11.4	3.5	1.6	6.3
New Jersey	11.7	6.5	1.1	4.1	11.8	4.0	2.3	5.4
Pennsylvania	12.8	6.6	1.4	4.8	13.0	4.9	1.5	6.6
East North Central	12.4	6.8	1.2	4.5	13.0	4.9	1.9	6.2
Ohio	13.5	7.4	1.2	4.8	13.7	4.9	1.9	6.9
Indiana	12.0	6.9	1.3	3.9	12.5	4.7	1.9	5.9
Illinois	11.6	6.1	1.2	4.2	12.7	4.9	1.7	6.1
Michigan	12.8	6.6	.9	5.3	13.5	4.7	2.1	6.8
Wisconsin	11.9	7.3	1.2	3.4	11.3	5.4	1.9	4.0
West North Central	12.3	7.0	1.3	4.0	12.0	5.2	1.8	4.9
Minnesota	12.7	7.8	1.3	3.6	11.6	5.7	1.4	4.4
Iowa	11.2	6.7	1.2	3.3	11.1	5.2	1.4	4.4
Missouri	13.8	6.6	1.6	5.6	13.9	5.0	2.3	6.6
North Dakota	11.0	7.1	1.1	2.8	11.6	5.6	1.6	4.3
South Dakota	13.4	8.5	1.5	3.4	10.3	4.9	1.5	3.9
Nebraska	10.6	6.9	.9	2.8	8.8	4.0	1.6	3.2
Kansas	11.1	6.8	.8	3.6	12.2	5.4	2.1	4.7
South Atlantic	15.5	7.1	1.8	6.6	14.9	5.0	2.5	7.5
Delaware	11.6	6.8	.8	3.9	11.9	4.8	2.0	5.0
Maryland	10.2	5.4	1.3	3.5	11.6	4.4	1.9	5.4
District of Columbia	14.9	6.1	1.8	7.0	16.0	5.0	3.1	8.0
Virginia	13.3	6.2	1.6	5.5	12.6	4.4	2.1	6.1
West Virginia	22.6	8.3	3.1	11.2	20.1	5.2	2.8	12.1
North Carolina	16.5	8.1	1.9	6.5	14.8	5.4	2.3	7.1
South Carolina	14.6	6.4	1.2	7.0	16.8	5.4	2.1	9.3
Georgia	19.4	9.0	1.5	8.9	18.7	5.5	3.1	10.0
Florida	15.6	6.6	2.3	6.7	14.0	4.8	2.7	6.5
East South Central	18.2	7.9	2.1	8.2	17.4	5.7	3.1	8.6
Kentucky	19.9	8.8	2.0	9.1	17.5	6.3	3.4	7.8
Tennessee	17.1	7.9	1.5	7.7	17.5	5.4	3.1	9.0
Alabama	17.4	7.8	2.3	7.3	16.3	5.5	2.5	8.4
Mississippi	18.9	6.8	2.8	9.3	18.8	5.6	3.5	9.7
West South Central	14.8	7.8	1.7	5.3	14.5	5.5	2.6	6.4
Arkansas	20.7	10.8	2.9	7.0	18.6	6.0	3.5	9.2
Louisiana	16.4	7.1	2.1	7.2	17.8	5.7	3.6	8.4
Oklahoma	16.5	9.1	2.4	5.0	16.5	6.9	2.4	7.3
Texas	13.1	7.2	1.3	4.6	12.4	5.1	2.2	5.1
Mountain	13.0	7.7	1.2	4.1	12.2	5.3	1.7	5.2
Montana	14.3	9.3	1.3	3.8	13.7	5.6	1.9	6.2
Idaho	12.4	7.7	1.2	3.5	14.6	6.9	2.2	5.5
Wyoming	11.2	7.2	1.0	3.0	11.4	5.7	1.3	4.4
Colorado	11.4	6.8	1.2	3.4	10.2	4.6	1.3	4.3
New Mexico	14.2	6.1	1.8	6.3	12.1	4.3	1.5	6.3
Arizona	14.6	8.5	.9	5.2	13.9	5.9	1.9	6.1
Utah	12.8	8.7	1.1	3.1	11.4	5.5	1.5	4.3
Nevada	11.7	7.3	.9	3.4	11.9	5.3	2.2	4.4
Pacific	12.1	6.1	1.2	4.8	12.8	5.0	1.8	6.0
Washington	12.8	7.3	1.3	4.1	12.3	5.4	1.6	5.3
Oregon	13.5	8.7	1.2	3.6	14.0	6.2	2.9	5.0
California	12.1	5.7	1.2	5.2	12.9	4.8	1.7	6.4
Alaska	7.2	5.3	—	1.5	7.8	3.9	1.3	2.7
Hawaii	8.7	5.2	.7	2.8	9.7	4.0	1.5	4.2

Source of basic data: Current Population Reports, P-20, No. 334.

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Geographic Variations in Work Disability

Currently, about 16.5 million (or more than one in eight) Americans between the ages of 18 and 64 have a health impairment that limits the kind or amount of work they can do. About 7.3 million (or one in every 18 persons) are so severely disabled they are unable to work at all.

These estimates are based on a sampling by the Bureau of the Census of the 1976 noninstitutionalized civilian population of the United States. Detailed data by geographic division and according to the severity of the disability are shown for males and females in the table on page 12.

Work disability has been defined by the Census Bureau as a health or physical condition that limits the kind or amount of work an individual can do on a job. Such disability generally refers to serious impairments that may last a relatively long period of time. Because the concept differs from other definitions of disability, care must be exercised in comparing figures on *work disability* with other disability studies.

The prevalence of work disabling conditions in the United States population varied considerably by geographic division. The highest rates among men were recorded in the East South Central States, where 18.2 percent were so disabled. In each state in that area the proportion of the adult males with work disabilities ranged from one quarter to one half higher than the national average of 13.3 percent. The only other geographic areas with work disability rates higher than the national average were also in the South; 15.5 percent of the adult men in the South Atlantic States and 14.8 percent in the West South Central States suffered from work disabling conditions. In two states, more than a fifth of the adult males were disabled; 22.6 percent of the men under age 65 in West Virginia and 20.7 percent of those in Arkansas reported a work disability. The prevalence of such conditions in Kentucky was only slightly lower—19.9 percent.

The two subdivisions of the Northeast—the New England and Middle Atlantic States—had the lowest disability rates in the nation, 11.0 and 11.6 percent, respectively. The states with the most favorable experience were Alaska (7.2 percent) and Hawaii (8.7 percent). Of the 48 continental states, Connecticut had the lowest proportion (10.1 percent) of men with work disabilities.

On the average, about half of the men with a work disability were not deterred on that account from working regularly, but a tenth, although able to work, were unable to do so with regularity. The remaining two fifths of the work disabled were so severely impaired that they could perform no work at all; this proportion was generally higher in states with high disability rates. In West Virginia, virtually half of the disabled men—about one in every nine adult males under age 65—were unable to do any work. Differences in population composition by age and occupation undoubtedly account for much of the variation in disability rates among the states.

The pattern of work disability among women closely paralleled that for men. The highest proportion of women with work disabling conditions (17.4 percent) was found in the East South Central States, closely followed by nearly 15 percent so disabled in the South Atlantic and West South Central areas. Among the individual states, West Virginia had the most unfavorable record; 20.1 percent of its women were disabled. As was the case among males, the lowest rates of work disability among women were registered in the New England area (11.5 percent) and in the Middle Atlantic area (12.0 percent). The states with the lowest prevalence of work disabling conditions were Alaska (7.8 percent) and Nebraska (8.8 percent). A work disability rate of less than 10 percent was also recorded in Hawaii.

In the nation as a whole, both men and women had the same proportion (13.3 percent) suffering from work disabling conditions. However, a greater proportion of women had health impairments that prevented them from working. This difference has been observed in other disability surveys, and is generally believed to reflect economic conditions, such as work opportunities and

labor force attachment, and not differences between the sexes in the severity of health problems. Only Kentucky and Florida had a higher proportion of men than women who were unable to work. In West Virginia 60 percent of the disabled women, or about one in eight of the female population, were unable to work at all.

Chronic conditions account for an overwhelming proportion of work disabilities, with nearly four out of five disabilities resulting from such medical conditions. Recent data indicate that geographic patterns of chronic conditions involving work disability generally resemble the pattern for all medical conditions as a group. In 1976 the South had the highest proportion of men and women with such chronic conditions (10.8 percent) and the Northeast States the lowest (9.5 percent).

Employment and Fertility Among Married Women

Fertility rates* among employed married women—especially those with steady employment—have been considerably lower than those of married women who were not employed. A study by the Statistical Bureau of the Metropolitan Life Insurance Company indicates that there is a strong possibility that employed married women in the United States limit their childbearing in order to work.

Because of the problems in determining employment activity during or prior to the period when fertility is measured and in assessing the effect of other factors on both employment and fertility, it has been difficult in the past to demonstrate that employment leads to reduced fertility. In an attempt to overcome some of these problems, data relating to the employment history of more than 400,000 married women (married once) in the United States were drawn from the 1970 decennial Census. All women who worked at least one week in 1969 or during pregnancy were counted as having had some employment activity, and were divided into attached workers† and unattached workers.‡ Estimates of the extent of work prior to or during pregnancy resulting in a live birth in 1969 were based on the employment history in 1969 of women giving birth in the last quarter of that year or in the first quarter of 1970, with allowance for employment activity in 1968 among women who gave birth early in 1969. It is probable that most employed women qualifying for maternity coverage under group contracts fulfill the definition of attached workers.

The table on page 15 shows fertility rates among married women in 1969 by age and degree of employment activity. Women who were not employed had consistently higher fertility rates than employed women up to the age of 40; after 40, fertility was extremely low among all groups. At ages 15-19 the birth rate among married women who did not work outside the home was 449 per 1,000, almost twice the rate of 231 per 1,000 among employed married women. The pattern continued with birth rates among nonworking women 1.5 times higher at ages 20-24 and approximately 1.3 times more at ages 25-39, with no difference at ages 40 and over.

A greater degree of employment activity generally meant more stringent limitation on fertility. Except at ages 15-19 and 40 and over, birth rates among attached workers were consistently lower than the rates for unattached workers. Unattached workers usually had lower fertility rates than nonworkers before age 35.

*Number of live births per 1,000 women.

†Worked 27 or more weeks during 1969, or worked at least 27 weeks prior to and/or during a pregnancy that resulted in a live birth in 1969.

‡Worked during 1969 or prior to and/or during a pregnancy that resulted in a live birth in 1969, but not long enough to qualify as an attached worker.

FERTILITY RATES AMONG MARRIED WOMEN

By Degree of Employment Activity

United States, 1969

Births per 1,000 Married Women

Age	All Married Women	Married Women With No Employment Activity	Married Women With Some Employment Activity		
			Total	Attached Workers*	Unattached Workers†
15-19	329	449	231	235	226
20-24	239	298	200	189	225
25-29	167	181	153	127	202
30-34	87	99	73	71	78
35-39	46	52	41	36	52
40-44	10	10	10	10	10
45-49	1	1	1	1	1

*Worked 27 or more weeks during 1969, or worked at least 27 weeks prior to and/or during a pregnancy that resulted in a live birth in 1969.

†Worked during 1969 or prior to and/or during a pregnancy that resulted in a live birth in 1969, but not long enough to qualify as an attached worker.

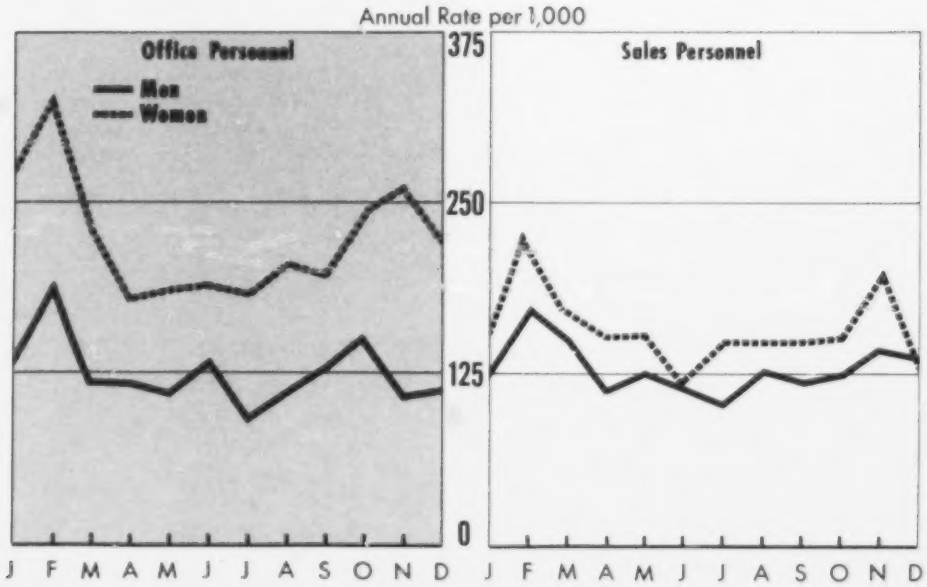
Source of basic data: 1/100 Public Use Sample from 1970 Census.

Several factors other than the desire to continue working might have contributed to the lower fertility of employed women. It is possible that some of the differences in fertility might have been due to differences in educational level—women with some college education are more likely to work and to have smaller families. Financial need might have induced women to go to work as well as to have fewer children. Differences in fertility might also have arisen because women with some fertility impairment remained in the labor force during all of 1969, while many of the women who gave birth withdrew. When education, financial need, and impaired fertility were taken into consideration in this study, however, it was found that they did not account for more than a fraction of the fertility differences associated with degree of employment activity. Even when allowance is made for younger women who do not seek employment in order to have large families, and for older women who enter the job market upon completion of childbearing, fertility rates among married women differ substantially according to employment status.

Employee groups have different compositions with respect to age, sex, and marital status. However, assuming a continuation of the 1969 fertility schedule and age structure among married women, about 60 out of every 1,000 married women who are attached workers would bear a child during the year, while about 105 of every 1,000 unattached workers would have a child. Recent trends toward smaller families make it likely, however, that fertility rates for these groups of women are currently lower than those reported for 1969.

Monthly Variation in Incidence of Disability, 1978

Personnel of Metropolitan Life Insurance Company



Disability lasting longer than a week. Claims classified according to month of initial payment. Personnel in the Pacific Coast States and Canada are not included.

Metropolitan Life
One Madison Avenue
New York, N.Y. 10010

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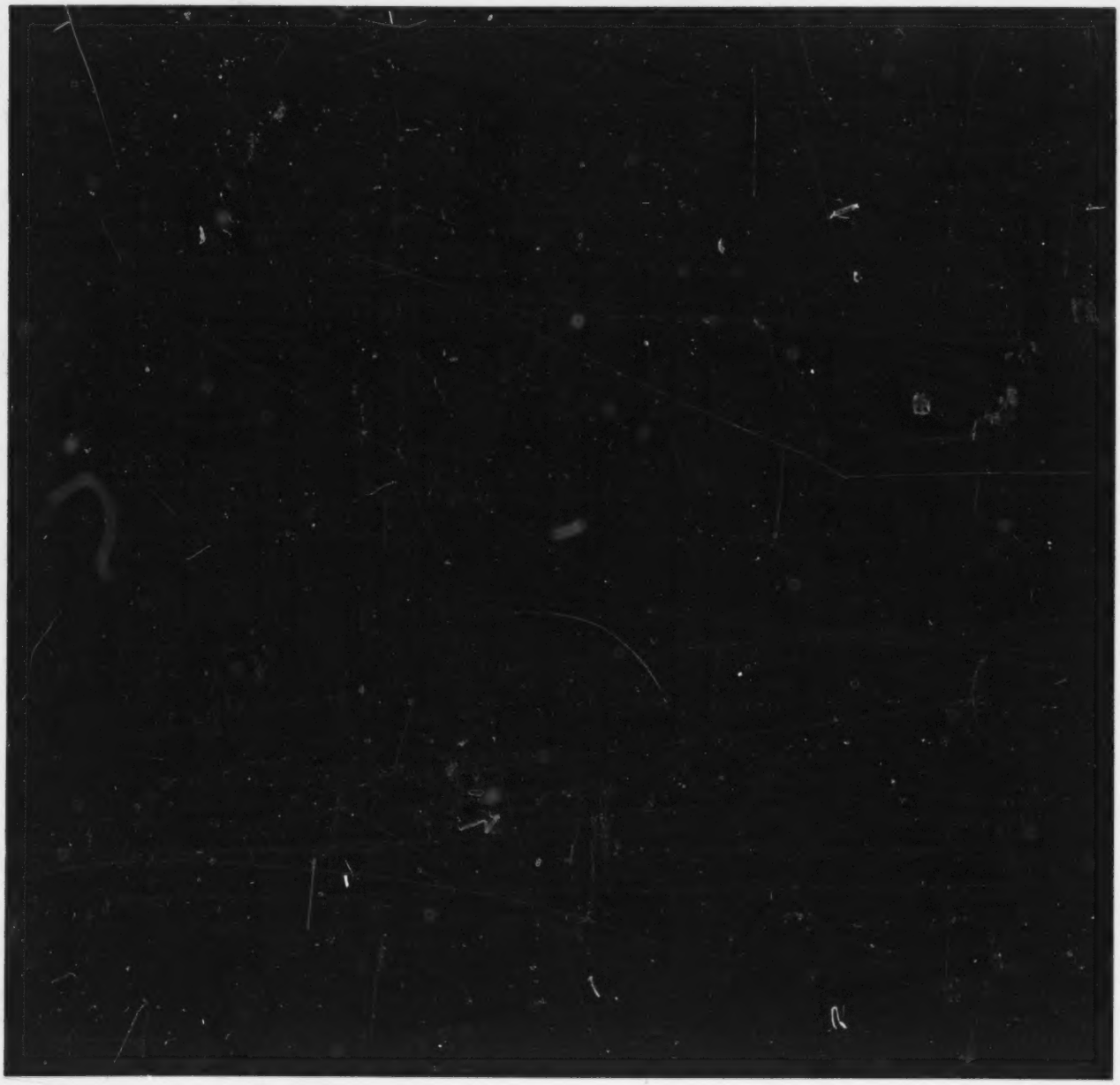


Work History Following Coronary Bypass Surgery
Mortality from Fires and Conflagrations
Disability Among Metropolitan Employees in 1977-78
Life Expectancy Among Diabetics—II
Child Population of the United States

TABLE 1—DISABILITY AND HOSPITAL EXPERIENCE AMONG EMPLOYEES UNDERGOING CORONARY BYPASS SURGERY IN 1974-76

Metropolitan Life Insurance Company Personnel

Characteristics	1974 All Ages	1974 Under 55	1974 55 to 64	1975 All Ages	1975 Under 55	1975 55 to 64	1976 All Ages	1976 Under 55	1976 55 to 64	1974-76 All Ages	1974-76 Under 55	1974-76 55 to 64
Number of persons, total	20	11	9	22	17	5	29	14	15	71	42	29
Recovery group	14	8	6	11	9	2	16	9	7	41	26	15
Nonrecovery group	6*	3	3*	11*	8*	3	13	5	8	30*	16*	14*
Percent recovering	70	73	67	50	53	40	55	64	47	58	62	52
Average days of disability												
Recovery group, total	205	225	180	210	176	†	183	189	175	198	195	202
Before surgery	55	57	52	47	31	†	35	43	24	45	43	48
After surgery	150	168	128	163	145	†	148	146	151	153	152	154
Nonrecovery group, before surgery	128	†	†	124	111	†	97	25	142	113	73	160
Average days of hospital stay following surgery												
Recovery group	12	13	11	10	10	†	13	12	13	12	12	11
Nonrecovery group	16	†	†	13	13	†	14	16	13	14	14	15

*Includes one death in 1974 and one in 1975.
†Not computed; fewer than five claims.

Note: Personnel in the Pacific Coast States and Canada are not included.

TABLE 2—HEALTH EXPERIENCE FOLLOWING RECOVERY FROM CORONARY BYPASS SURGERY PERFORMED IN 1974-76

Cases Traced to May 1, 1978

Metropolitan Life Insurance Company Personnel

Characteristics	1974 All Ages	1974 Under 55	1974 55 to 64	1975 All Ages	1975 Under 55	1975 55 to 64	1976 All Ages	1976 Under 55	1976 55 to 64	1974-76 All Ages	1974-76 Under 55	1974-76 55 to 64
Employees recovering	14	8	6	11	9	2	16	9	7	41	26	15
Employees with recurrent disability*	7	6	1	6	5	1	4	4	0	17	15	2
Number becoming permanently disabled	4	3	1	1	1	0	0	0	0	5	4	1
Episodes of disability*												
All causes	10	8	2	6	5	1	5	5	0	21	18	3
Cardiovascular disease	7	6	1	4	3	1	3	3	0	14	12	2
Average days of disability†												
All causes	225	269	‡	168	133	‡	169	169	‡	195	203	‡
Cardiovascular disease	255	296	‡	‡	‡	‡	‡	‡	‡	248	260	‡
Employees electing early retirement	0	0	0	1	0	1	2	0	2	3	0	3

*Lasting longer than a week.
†Disability days beyond one year not included.
‡Not computed; fewer than five claims.

Note: Personnel in the Pacific Coast States and Canada are not included.

Work History Following Coronary Bypass Surgery

Coronary bypass surgery promises relief from some of the more crippling symptoms of advanced coronary artery disease. The disease is progressive and may lead to intolerable pain, serious arrythmias, myocardial infarction, congestive heart failure, and premature death. The aim of bypass surgery is to rechannel the blood supply to the heart. By creating a shunt around those coronary arteries that have been narrowed or blocked by an accumulation of fatty deposits, the procedure restores the blood flow (and thus the necessary oxygen) to deprived areas of the heart.

In the brief period since the first coronary bypass operation was performed in 1964, the number of persons undergoing this procedure has risen to more than 70,000 annually, at a cost ranging from $10,000 to $15,000 per operation.[1,2] Because of the enormous outlay—the annual national health bill for this single surgical procedure now exceeds a billion dollars—questions have arisen as to the necessity for and the effectiveness of coronary bypass surgery.

Generally, the survival of surgically treated patients has been compared with survival among those medically treated, and controversy has arisen with regard to the significance of the differences observed, the statistical validity of the conclusions reached, the possibility of bias in patient selection, the quality of surgery performed, etc. Moreover, the improved "quality of life" after surgery—so frequently cited in the literature—does not readily lend itself to scientific analysis.

Few studies have defined recovery in terms of ability to return to work or have studied results among patients in a working population. However, one investigation[3] of 817 men who were actively employed prior to surgery indicated that 83 percent returned to employment following surgery and 17 percent retired. In another study,[4] 66 percent of the patients working full time prior to surgery returned to full-time work after the bypass operation, 13 percent reduced their hours of work, and 21 percent stopped working. In a third study,[5] 79 percent of those able to work prior to surgery returned to work afterward.

In this investigation, the Statistical Bureau of the Metropolitan Life Insurance Company has reviewed the health status and traced the work history after surgery of Company employees who underwent coronary bypass surgery in 1974-76, with follow-up to May 1, 1978. The majority of these employees were office or sales personnel and all had been actively at work or on temporary disability prior to surgery. Those who did not return to work within one year were considered as not having recovered from the operation. Because the employees in the study had financial incentives to return to work promptly upon recovery—failure to resume work when able (as determined by the attending physician) resulted in termination of disability benefits—greater credence may be attached to the work capacity of patients in this study than in studies where the financial implications were not considered.

As shown in Table 1, 71 employees (68 of whom were male) underwent coronary bypass surgery during the three-year period of this investigation. Their ages ranged from 31 to 64, with a mean of 52 years. Forty one (58 percent) recovered, and two died (one while convalescing in the hospital and the other shortly after discharge from the hospital). No other deaths were reported prior to the end of the observation period on May 1, 1978. The remaining 28 employees (39 percent) were unable to resume work within one year after onset of disability, and presumably will never again be employed. (Later review showed that none of these employees had returned to work by the end of the follow-up period.) A greater proportion of employees at ages under 55 recovered (62 percent) than did those at ages 55 and over (52 percent). About nine tenths of the office personnel who had undergone bypass surgery returned to work, compared with slightly more than half of the sales personnel.

Although the number of coronary bypass operations among Metropolitan Life employees

increased during the three-year period—29 operations in 1976, compared with 22 in 1975 and 20 in 1974—the proportion recovering did not increase. In 1974, 70 percent returned to work, but the recovery rates declined to about 50 percent in the later two years. This may reflect more careful selection of candidates for surgery in 1974 than in 1975 or 1976.

Some recoveries were remarkably rapid; one patient returned to work after an absence of less than seven weeks and two others returned before 11 weeks had elapsed. In general, however, patients who had undergone coronary bypass surgery required a considerably longer period of convalescence before recovery was deemed complete. The average length of disability was about 28 weeks, nearly 22 weeks of which occurred during the post-operative period.

The period of disability prior to surgery was appreciably shorter for those who recovered than for those who did not. Members of the recovery group were disabled on the average about six weeks before surgery was undertaken, while those in the nonrecovery group had 16 weeks of disability before surgery. Similarly, those in the nonrecovery group were hospitalized for about seven days awaiting surgery, compared with four days among those who recovered, and required 14 days of hospitalization after surgery, compared with 12 days for the recovery group.

To measure the effectiveness of bypass surgery in keeping recovered employees actively at work, their detailed health records were reviewed. As shown in Table 2, 17 of the 41 employees who had returned to work had recurrent disability lasting longer than a week during the observation period, and were either readmitted to the hospital or remained at home under a physician's care; these 17 employees incurred 21 episodes of disability in the follow-up period. The circulatory system was implicated in two thirds of the disabilities (14 cases) in the follow-up period. Five cases, four of which involved cardiovascular problems, were serious enough to result in permanent disability. Five employees were on temporary disability at the end of the follow-up period; only one of them returned to work. One employee underwent a second bypass operation during the follow-up period. The rate of recurrent disability among sales personnel was about double that among office personnel.

Of the 41 employees who recovered from coronary bypass surgery, 26 were under age 55, compared with 15 in the age group 55-65. However, 15 of the 17 employees who had recurrent disability were in the younger age group. This may indicate a greater proportion of more serious cases of coronary artery disease among those under age 55 or more careful selection of candidates for surgery at the older ages. Affecting the results to some degree, too, was the loss to follow-up of the experience of some older employees who retired.

The average period of disability in the follow-up period was about the same as that for the bypass operation itself—195 days of disability following return to work, compared with 198 days for their initial disability. In comparison, Metropolitan Life male employees who were disabled by heart disease in 1971-72 at ages 45-64 averaged 148 days of disability. Three of the employees who returned to work elected early retirement, due possibly to poor health.

Return to gainful occupation following any serious illness is influenced by many conditions, such as the "work ethic" of the patient, the attitude of the family and of the attending physician, and the financial resources of the patient (particularly the amount of income received during periods of disability). The incentive to return to work may be affected to a significant degree by any of the above factors, rendering "disability" as opposed to "working" as much a socio-economic decision as a medical one.

[1]Miller JA: The bypass boom. Science News 113:314-16, 1978.
[2]McIntosh HD, Garcia JA: The first decade of aortocoronary bypass grafting, 1967-1977: a review. Circulation 57:405-431, 1978.
[3]Rimm AA, Barboriak JJ, Anderson AJ, et al: Changes in occupation after aortocoronary vein-bypass operation. JAMA 236:361-364, 1976.
[4]Barnes GK, Ray MJ, Oberman A, et al: Changes in working status of patients following coronary bypass surgery. JAMA 238:1259-1262, 1977.
[5]Symmes JC, Lenkei SCM, Berman ND: Influence of aortocoronary bypass surgery on employment. Can Med Assoc J 118:268-270, 1978.

Mortality from Fires and Conflagrations

Fires and conflagrations constitute the third leading cause of accidental death in the United States. Each year such accidents result in about 6,500 deaths,* more than 325,000 injuries, and nearly $4.5 billion in property loss.

Variations in mortality from fires and conflagrations by age, sex, and color are shown in Table 1. The death rate from this cause in 1976-77 was 2.9 per 100,000 population for all ages combined. The highest fatality rates occurred among the very young and the elderly—those least able to save themselves in case of fire. A fatality rate of 5.3 per 100,000 was recorded among children under 5 years of age. The death rate from this cause dropped to a minimum in adolescence, and then rose progressively with advance in age, somewhat slowly at first but accelerating rapidly past age 55. At ages 75 and over the death toll reached 11.6 per 100,000—four times the rate at all ages combined. The pattern was much the same for both sexes, but rates among males were at a higher level. At all ages combined a death rate of 3.7 per 100,000 was recorded among males, about 1.5 times the rate of 2.2 among females. This higher mortality among males prevailed in every age group.

Nonwhites experienced far higher mortality from fires and conflagrations than did whites. In 1976-77 mortality among nonwhite men from this cause was 7.8 per 100,000 at all ages combined, more than double the rate of 3.1 among white men. The disparity was about the same for women, 4.6 for nonwhites and 1.9 for whites. The nonwhite disadvantage was greatest at ages 65-74 among males and at ages 75 and over among females.

Mortality from fires and conflagrations varies appreciably from one area of the United States to another. In 1977 the highest mortality occurred in the South and the lowest in the Northeast and the West. Fatality rates in excess of 5.0 per 100,000 population were recorded in Kentucky, Mississippi, Alabama, the District of Columbia, and South Carolina. The highest rate in the

*All deaths resulting from conflagration and other types of fires, except in transportation, are included regardless of the nature of the injury.

TABLE 1—MORTALITY FROM FIRES AND FLAMES
United States, 1976-77

Average Annual Death Rate per 100,000

Age Group	Total Persons			White			Nonwhite		
	Total	Male	Female	Total	Male	Female	Total	Male	Female
All Ages	2.9	3.7	2.2	2.5	3.1	1.9	6.0	7.8	4.6
Under 1	4.9	5.0	4.7	3.4	3.7	3.2	11.8	11.5	12.0
1-4	5.3	5.9	4.6	4.0	4.5	3.5	11.2	12.3	10.0
5-9	2.0	2.2	1.9	1.6	1.7	1.5	4.3	4.6	3.9
10-14	1.1	1.1	1.0	.9	1.0	.9	2.0	2.1	1.9
15-19	1.2	1.4	.9	1.1	1.3	.9	1.6	2.0	1.2
20-24	1.7	2.3	1.1	1.6	2.1	1.0	2.7	3.4	2.1
25-34	1.7	2.5	.9	1.5	2.2	.8	3.4	5.2	1.9
35-44	2.0	2.8	1.2	1.7	2.3	1.1	4.2	6.7	2.2
45-54	2.9	3.9	1.9	2.4	3.1	1.6	6.9	10.4	3.9
55-64	4.1	5.8	2.7	3.5	4.8	2.3	10.4	15.3	6.2
65-74	5.8	8.2	4.0	4.7	6.5	3.3	16.5	23.5	10.8
75 and over	11.6	15.5	9.3	9.6	13.2	7.6	32.6	37.8	29.1

Note: All deaths resulting from conflagration and other types of fires, except in transportation, are included regardless of the nature of the injury.

Source of basic data: Reports of the Division of Vital Statistics, National Center for Health Statistics.

nation (6.8 per 100,000) occurred in Alaska.

Most victims of fatal fire injuries die in accidents in which one or two lives are lost. However, fires responsible for five or more deaths are not infrequent. According to information compiled by the Metropolitan Life Insurance Company between 1971 and 1978, there were at least 298 such catastrophic fires, with a death toll of approximately 2,300 lives. These fatalities were about 4 percent of the total number of deaths in fires and conflagrations during this period. Catastrophic fires and flames took more lives than did any other type of catastrophe during this period—more than the number lost in either catastrophic aviation accidents or all types of cataclysms combined (about 2,000 each).

Most fatalities caused by fires and conflagrations are attributed to carbon monoxide poisoning and pulmonary injury. Instant death at the scene of the fire or deaths within the first 24 hours are predominantly due to carbon monoxide; most of the victims die of asphyxiation *before* the flames reach them. The majority of survivable injuries, on the other hand, are due to burns.

Unlike the risk of death from fire, the risk of fire injury is highest between ages 18 and 35, probably because persons at these ages have a greater ability to escape from a fire even when injured. Each year an estimated 50,000 persons are hospitalized with burn injuries; treatment may involve hospital confinement for periods of up to two years. Many patients must return over and over again for plastic or reconstructive surgery. Until recent years, the victims of severe burns either died or were disfigured or disabled for life. Today, a small number of hospital burn centers—employing new techniques, specialized equipment, and the services of specially trained personnel (surgeons, nurses, therapists, psychologists, etc.)—are making outstanding contributions in the treatment and rehabilitation of burn victims. Many more such burn centers are needed throughout the country to care for all fire victims.

The National Fire Protection Association (NFPA) estimates that 3,070,597 fires occurred in the United States during 1978, resulting in a total property loss of $4,478,929,183. Table 2 shows the estimated number of fires and property loss, by type of fire, during 1978. These estimates are based on data reported to the NFPA by fire departments across the country, with no adjustments made for unreported fires. Dollar figures represent *direct* property loss only.

TABLE 2—FIRES AND PROPERTY LOSS—BY TYPE OF FIRE

United States, 1978

Type of Fire	Estimated Number of Fires	Estimated Property Loss
All types	3,070,597	$4,478,929,183
Fires in structures	1,130,227	4,015,337,827
Fires outside of structures with value involved but no vehicle (outside storage, crops, timber, etc.)	111,361	30,244,464
Fires in vehicles*	565,765	382,874,620
Fires in brush, grass, wildland (excluding crops and timber), with no value or loss involved	634,758	—
Fires in rubbish including dumpsters (outside of structures), with no value or loss involved	335,127	—
All other fires	293,339	50,472,272

*Includes highway vehicles, trains, boats, ships, aircraft, farm vehicles, and construction vehicles.
Source: National Fire Protection Association.

TABLE 3—BUILDING FIRES AND PROPERTY LOSS—BY PROPERTY USE

United States, 1978

Property Use	Building Fires		Property Loss	
	Estimated Number	Percent of Total	Estimated Amount	Percent of Total
Total	1,130,227	100.0%	$4,015,337,827	100.0%
Public assembly	33,897	3.0	209,249,870	5.2
Educational	24,062	2.1	95,913,920	2.4
Institutional	40,547	3.6	14,399,147	.4
Residential (total)	757,525	67.0	2,165,605,828	53.9
One- and two-family dwellings*	623,233	55.1	1,780,073,000	44.3
Apartments	108,912	9.6	293,603,580	7.3
Hotels and motels	13,129	1.2	73,468,896	1.8
Other residential	12,251	1.1	18,460,352	.5
Stores and offices	76,553	6.8	480,670,460	12.0
Industry, utility, defense†	65,996	5.8	643,567,870	16.0
Storage in structure†	63,209	5.6	318,207,740	7.9
Special structure	68,436	6.1	87,722,992	2.2

*Includes mobile homes.
†Understated because incidents handled only by private fire brigades or fixed suppression systems were not reported to the NFPA.
Source: National Fire Protection Association.

Slightly more than a third of the fires occurred in structures, but they accounted for about 90 percent of all property loss.

Table 3 presents the NFPA estimates of the number of structure (building) fires and the corresponding property loss, according to property use, during 1978. While fires in residences (mostly one- and two-family dwellings) accounted for 67.0 percent of all building fires, only 53.9 percent of all building property loss was attributed to residential fires. On the other hand, fires in stores and offices accounted for 6.8 percent of all structure fires, but were responsible for 12.0 percent of all building property loss. Fires in buildings used for industry, utility, and defense also accounted for a much larger proportion of the total structure property loss than of the total number of structure fires.

The National Fire Protection Association has estimated that there were more than half a million building fires in 1978 that were of incendiary or suspicious origin, pointing up the serious problem that arson represents. Such fires resulted in property losses of well over $1 billion. Fires of incendiary or suspicious origin are the most frequent type in nonresidential buildings (all types of occupancy combined). The next most frequent causes include defective electrical wiring, carelessness near open flames or sparks, and carelessness in smoking. (The ranking of causes varies by type of nonresidential occupancy.) In residential buildings, however, fires of incendiary or suspicious origin rank fourth, preceded by fires involving cooking equipment, as well as those from carelessness in smoking, or from defective heating equipment.

Several measures could reduce the number of deaths and injuries from residential fires. Most important is the installation of early-warning fire or smoke detection devices in every home. There should also be advance family planning for an alternate escape route in case the usual exit is blocked by flames, toxic gases, or smoke. In addition, the family should plan to meet at a predesignated location outside the home for a head count after escaping from the fire.

Earlier this year, Metropolitan Life launched a nationwide program to promote the use of its Fire Rescue Sticker. Attached to a window or door, the sticker alerts firefighters to the presence of children and handicapped or elderly persons who need help to escape. Millions of stickers have already been distributed free of charge as the result of an advertisement in a national magazine, as well as through fire and police departments, and local safety organizations.

Disability Among Metropolitan Employees in 1977-78

Personnel of the Metropolitan Life Insurance Company were disabled at an appreciably higher rate in 1977-78 than in 1976. Among employees in the Home Office, Head Offices, and Field, new cases of disability lasting longer than a week occurred at an average annual rate of 155 per 1,000 during this two-year period, compared with 138 per 1,000 in 1976. Although increases were registered among both men and women, the rate of disability among women would have shown a decline were it not for the inclusion for the first time of maternity and related claims.

The highest disability rates were recorded among women—203 per 1,000 for office personnel and 153 for sales personnel. Disability rates among men were far lower at 125 per 1,000 for office personnel and 126 for sales personnel. (See table on page 9.)

The incidence of disability lasting longer than a week showed a steady rise with advance in age among men. The annual frequency of disability among male office personnel increased from 93 per 1,000 at ages under 25 to 246 per 1,000 at ages 55-64; the rates for sales personnel were 100 and 181, respectively. The pattern of disability among women was generally similar to that among men, except for the marked rise in disability among women at ages 17-44, because of the large number of pregnancies at those ages.

The chart on the back page shows the wide seasonal variation in the frequency of disability. Generally, the highest rates occur during the colder months of the year, largely because of the increased frequency of respiratory conditions in the winter months. The difference in the disability rate between the peak month and the low month of the year has usually been greater for women than for men. In 1978, however, the differential widened for men and narrowed for women.

Among male office personnel, accidental injuries were the leading cause of disability, followed closely by diseases of the respiratory system. These two causes, together with diseases of the digestive system, accounted for more than half of all disabilities lasting longer than a week among male office employees during the two-year period. Accidental injuries were a major cause of disability in every age group, ranking first at ages under 45, and second only to digestive diseases at ages 45-54. Diseases of the circulatory system, principally those of the heart, were the leading cause of disability at ages 55-64; diseases of the respiratory system ranked second at these ages.

Among male sales personnel, accidental injuries were the most frequent cause of disability, followed by diseases of the digestive and circulatory systems. About half of all disabilities among male sales personnel were attributed to these three disease categories. Accidental injuries were the ranking cause at ages under 45; circulatory diseases led after these ages.

Respiratory diseases were the most frequent cause of disability among female office and sales personnel. Ranking second among leading causes of disability were maternity and related conditions for office personnel and accidental injuries for sales personnel. Among office personnel, maternity and related conditions led at ages under 45 while respiratory diseases led at ages 45-64. Almost one of every 15 women aged 25-44 in the Home and Head Offices were disabled in 1977-78 because of pregnancy. Among sales personnel, respiratory diseases and acci-

INCIDENCE OF DISABILITY LASTING LONGER THAN A WEEK

Personnel of the Metropolitan Life Insurance Company,* 1977-78

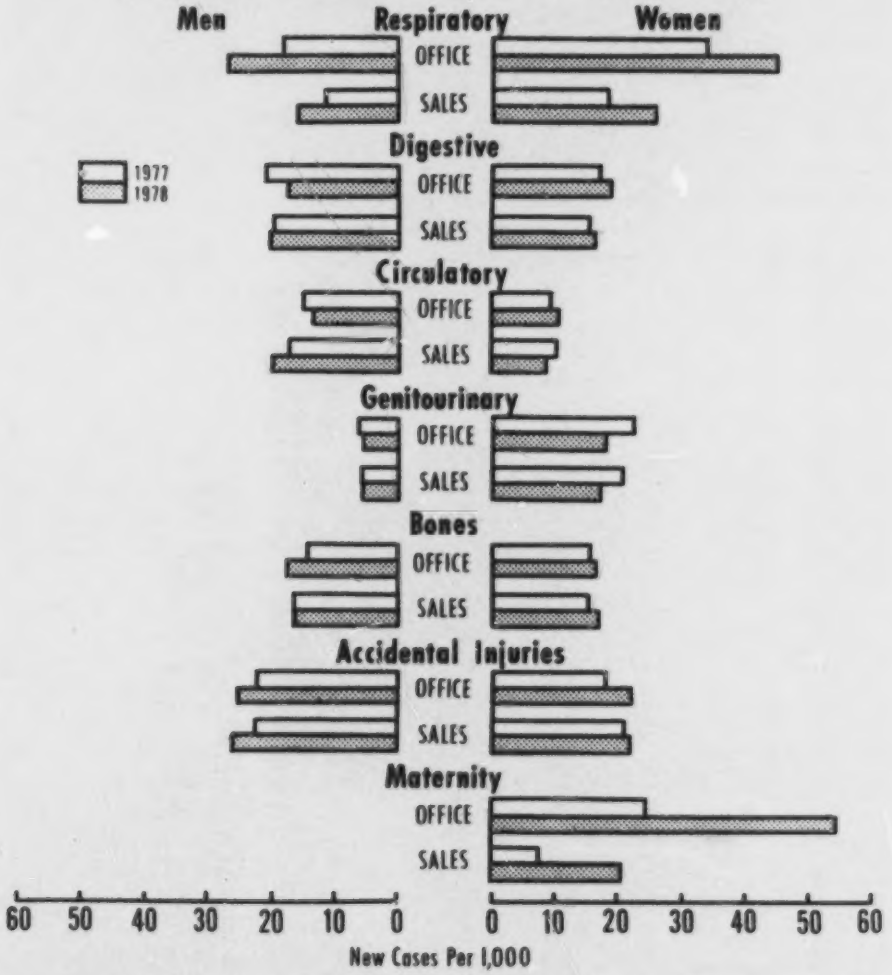
Annual Incidence per 1,000

Cause of Disability	Office Personnel					Sales Personnel†				
	Ages 17-64	Ages 17-24	Ages 25-44	Ages 45-54	Ages 55-64	Ages 17-64	Ages 17-24	Ages 25-44	Ages 45-54	Ages 55-64
Male										
All Causes	124.8	92.6	95.9	162.8	245.6	126.0	99.7	102.5	142.2	181.4
Diseases of respiratory system	22.4	15.9	18.8	24.1	43.7	13.8	16.8	13.4	13.2	14.2
Diseases of digestive system	19.0	17.5	13.6	29.6	32.7	19.8	17.1	14.4	23.4	30.9
Diseases of circulatory system	14.2	‡	6.6	25.0	50.0	18.5	3.5	6.8	26.3	47.5
Diseases of heart	8.4	‡	2.6	18.5	30.9	10.9	‡	2.9	15.4	31.7
Diseases of genitourinary system	5.7	‡	4.3	‡	10.0	5.3	‡	3.5	6.5	10.1
Diseases of bones and other organs of movement	15.9	10.8	10.7	22.2	37.3	16.5	10.4	14.5	19.4	21.1
Neoplasms, total	4.6	‡	3.0	10.2	‡	4.1	‡	2.7	5.4	6.9
Benign	2.5	‡	2.1	‡	‡	2.3	‡	2.0	2.7	2.5
Psychoneuroses and psychoses	3.7	‡	3.0	‡	‡	7.8	4.4	8.2	9.0	6.9
Accidental injuries	23.5	20.9	22.4	28.7	26.4	24.3	29.4	25.9	22.0	20.6
Female										
All Causes	203.1	166.5	215.5	197.2	228.1	152.9	133.8	157.7	142.3	183.2
Diseases of respiratory system	39.7	29.5	34.7	44.5	60.7	22.5	22.7	20.7	20.8	34.2
Diseases of digestive system	18.3	20.6	16.5	19.3	18.3	15.9	13.5	15.0	21.2	13.1
Diseases of circulatory system	10.1	2.6	5.9	18.1	22.6	9.6	‡	8.3	12.5	20.2
Diseases of heart	2.8	‡	‡	5.5	7.6	3.3	‡	2.1	5.6	8.8
Diseases of genitourinary system	20.4	12.0	25.8	26.5	13.7	19.0	13.0	23.5	18.6	8.8
Maternity and related conditions	39.3	48.6	65.9	—	—	13.9	18.9	21.0	—	—
Diseases of bones and other organs of movement	16.1	7.7	14.5	21.9	25.7	16.3	11.3	15.0	16.0	30.7
Neoplasms, total	11.3	7.2	11.4	13.2	14.6	9.7	8.1	8.3	13.8	10.5
Benign	9.0	7.0	9.8	10.4	8.5	7.7	7.0	7.9	8.6	‡
Psychoneuroses and psychoses	5.8	4.7	7.1	7.2	3.3	7.6	‡	9.6	6.9	‡
Accidental injuries	20.4	15.2	16.0	22.2	35.7	21.4	20.0	21.4	15.6	35.4

*Personnel in the Pacific Coast States and Canada are not included.
†Employees in the District Offices and Field (including clerical).
‡Fewer than 10 cases in this category; rate not computed.

Leading Causes of Disability, 1977 and 1978

Personnel of the Metropolitan Life Insurance Company



Disability lasting longer than a week. Personnel in the Pacific Coast States and Canada are not included. Sales personnel include employees in the District Offices and Field (including clerical).

dental injuries were major causes of disability in every age group. Respiratory diseases were the leading cause of disability at ages under 25 and ranked second at ages 45-64. Accidental injuries led at ages 55-64 and were second at ages under 45.

The chart above shows the experience by major causes of disability separately for 1977 and 1978. Disability rates for both sexes and employee classes rose from 1977 to 1978. There was also a general increase in diseases of the respiratory system, diseases of the bones and other organs of movement, accidental injuries, and disabilities arising from pregnancy. Only genitourinary disorders were less frequent in 1978 than in 1977.

Life Expectancy Among Diabetics—II

An article appearing in the Jul-Sep 1979 issue of the *Statistical Bulletin* presented estimates of the life expectancy among diabetics in the United States. These estimates were based on mortality data that included deaths ascribed to diabetes as a contributory cause, in addition to those deaths attributed to diabetes as the principal cause. It was pointed out that the figures shown represented optimum survival among diabetics, because no allowance had been made for the degree of understatement that occurs when diabetes is omitted entirely from the death certificate; such understatement can affect estimates of life expectancy at birth by as much as 1½ years for each one percent of underreporting. While there are no precise figures available on such underreporting, some studies[1,2] indicate that between 7.6 and 22.8 percent of all death certificates failed to show diabetes as either an underlying or a contributory cause of death in cases where the deceased had actually been diabetic.

To further clarify the estimated expectation of life among diabetics, a table of life expectancy values based on varying assumptions of underreporting—ranging from 0 to 20 percent—is presented on page 12. By adjusting the estimated number of deaths among diabetics to include those deaths where diabetes was not listed on the death certificate as either a primary or a contributory cause of death, the estimated life expectancy among diabetics was significantly reduced. At birth, the life expectancy among male diabetics was estimated at 66.8* years, if it is assumed that there were no unreported diabetic deaths. With 2.5-percent underreporting, life expectancy at birth fell to 60.6 years and, with 5-percent underreporting, to 56.1 years. Life expectancy was reduced to 52.6 years and 49.7 years, based on underreporting of 7.5 and 10 percent, respectively. Among female diabetics, life expectancy at birth was estimated at 74.0 years with no underreporting, and at 69.8 and 66.6 years with 2.5 and 5.0 percent underreporting. Life expectancy was reduced still further to 64.0 and 61.7 years when underreporting of 7.5 and 10 percent was assumed. With underreporting as high as 20 percent, life expectancy among male and female diabetics was estimated at 41.4 and 54.9 years, respectively. These adjustments produce lower estimates of life expectancy among diabetics throughout the life span, as may be seen in the chart on page 13.

Between 1968 and 1977, the age-adjusted mortality rate from diabetes in the United States general population declined by 25 percent among men (from 14.0 to 10.5 per 100,000) and by 33 percent among women (from 15.3 to 10.3 per 100,000). Despite such reduction in mortality, however, the life expectancy of diabetics remains lower than that of the general population at nearly all ages—when reasonable assumptions are made to account for unreported diabetic deaths.

Diabetes is not a homogeneous disease; different subcategories of the disease have different age patterns. The construction of the diabetic life table did not take into account the age at onset nor the duration of the disease because such data were not available from mortality records. The diabetic life table can be considered a theoretical aggregate for all types of the disease combined, but does not represent any type separately.

*The figures differ slightly from those shown in the Jul-Sep 1979 issue of the *Statistical Bulletin* because of necessary changes in methodology to compute the effects of underreporting.

[1]Tokuhata, GK, Miller W, Digon E, et al: Diabetes mellitus: an underestimated public health problem. J Chron Dis 28:23, 1975.
[2]Joslin's *Diabetes Mellitus*. Edited by Marble A, White P, Bradley RF, et al. Philadelphia, Lea and Febiger, p 235, 1971.

ESTIMATED LIFE EXPECTANCY AMONG DIABETICS ACCORDING TO DEGREE OF UNDERREPORTING

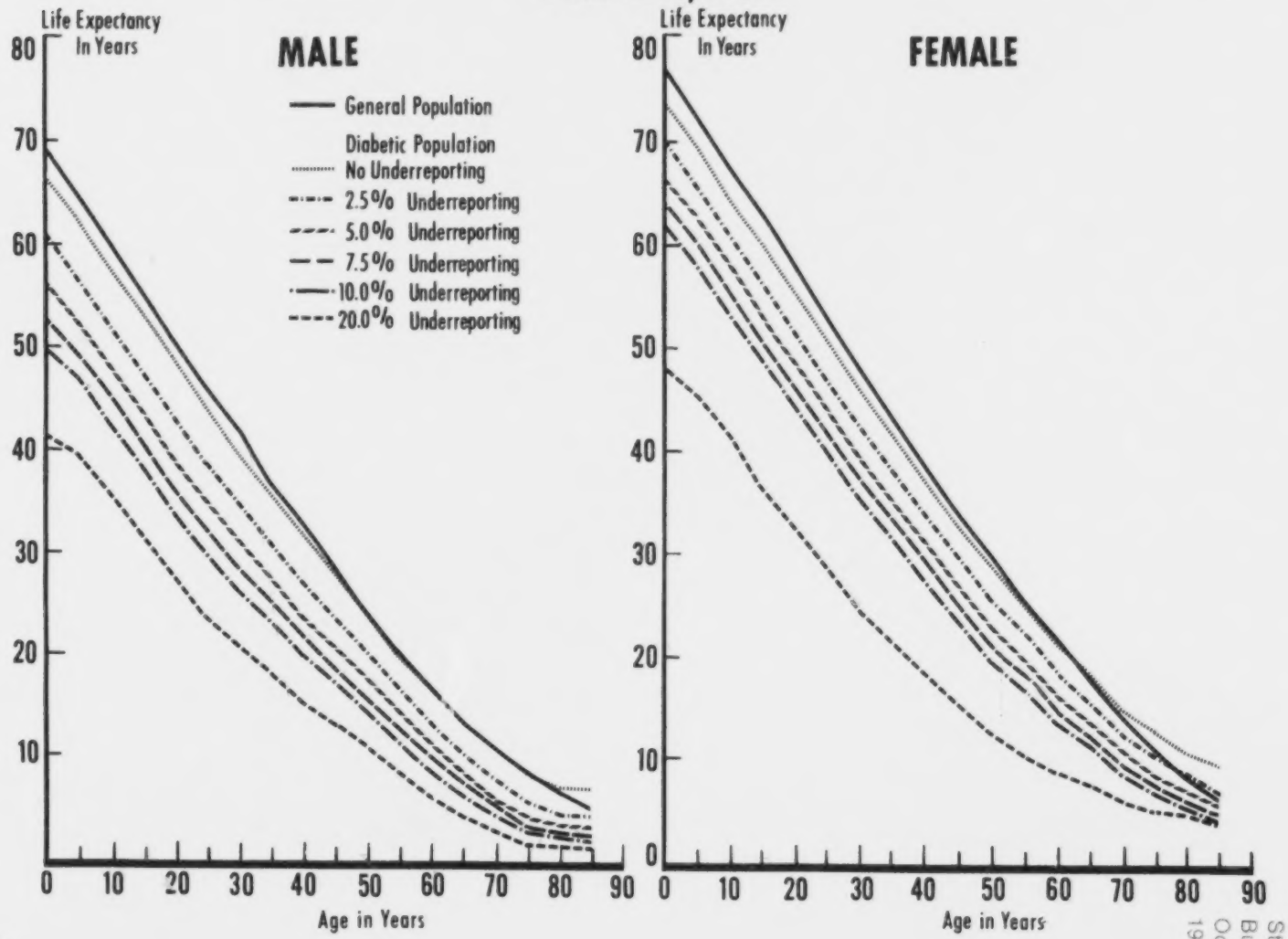
United States, 1976

Age (Years)	Underreporting 0%	2.5%	5.0%	7.5%	10%	20%
	Expectation of Life, in Years					
	MALE					
0-5	66.8	60.6	56.1	52.6	49.7	41.4
5-10	62.9	57.1	53.0	49.8	47.2	39.8
10-15	58.2	52.5	48.5	45.4	42.9	35.8
15-20	53.5	47.9	44.0	40.9	38.5	31.6
20-25	48.7	43.2	39.4	36.4	34.0	27.3
25-30	44.4	39.0	35.4	32.6	30.3	24.0
30-35	40.0	34.9	31.4	28.8	26.6	20.8
35-40	36.1	31.3	28.1	25.7	23.7	18.5
40-45	32.0	27.4	24.4	22.2	20.4	15.6
45-50	28.3	24.1	21.3	19.4	17.8	13.7
50-55	24.2	20.3	17.8	16.0	14.6	11.0
55-60	20.5	16.8	14.6	12.9	11.7	8.6
60-65	16.9	13.6	11.6	10.2	9.1	6.5
65-70	13.7	10.7	8.9	7.7	6.8	4.8
70-75	10.9	8.1	6.6	5.6	4.9	3.3
75-80	8.6	6.0	4.7	3.8	3.2	2.0
80-85	7.6	5.1	3.9	3.1	2.6	1.6
85-	7.4	5.0	3.7	3.0	2.5	1.5
	FEMALE					
0-5	74.0	69.8	66.6	64.0	61.7	54.9
5-10	70.0	66.1	63.1	60.6	58.6	52.5
10-15	65.2	61.3	58.4	56.0	53.9	48.0
15-20	60.6	56.8	53.9	51.5	49.6	43.9
20-25	55.8	52.0	49.1	46.8	44.9	39.3
25-30	51.2	47.5	44.7	42.5	40.6	35.3
30-35	46.6	42.9	40.2	38.1	36.3	31.1
35-40	42.3	38.8	36.2	34.2	32.5	27.7
40-45	37.8	34.4	31.9	29.9	28.3	23.7
45-50	33.4	30.1	27.7	25.8	24.3	20.0
50-55	29.2	26.0	23.7	21.9	20.4	16.5
55-60	25.4	22.4	20.2	18.6	17.3	13.7
60-65	21.6	18.8	16.7	15.2	14.0	10.7
65-70	18.7	16.0	14.2	12.8	11.8	9.0
70-75	15.4	12.9	11.2	10.0	9.0	6.6
75-80	13.0	10.7	9.1	8.0	7.2	5.1
80-85	11.2	8.9	7.5	6.5	5.8	4.0
85-	9.7	7.6	6.2	5.3	4.6	3.0

Estimated Expectation of Life According to Degree of Underreporting

Diabetic vs. General Population

United States, 1976



Child Population of the United States

The child population of the United States has been declining for a number of years. From a high of 55,578,000 in 1965, the number of children under the age of 14 decreased to 53,783,000 in 1970, and to 46,739,000 in 1978. The Census Bureau estimates that, based on current fertility trends, there will be a slight increase in the child population by 1985, although the total number will fall short of 48 million. The number of children under age 6 will increase but there will be fewer children aged 6-13.

As shown in the table on page 15, which presents current data on the characteristics of the child population, children under the age of 14 are almost equally divided between boys and girls—51 percent male and 49 percent female. This proportion persists throughout the age range. Boys outnumber girls slightly at birth and it is not until the twenties that women are in the majority.

There is very little variation by age in the racial composition of the child population. Nonwhite children comprise about 17 percent of the population under age 14 and the proportion is approximately the same for each age group shown in the table.

In each geographic area of the country children represent about one fifth of the total resident population. This proportion is highest in the Mountain States, and lowest in the Middle Atlantic States. More than half of the nonwhite children live in central cities of metropolitan areas, while only a fifth of the white children live in central cities.

About 88 percent of the children in the age range 3-13 are enrolled in school; at ages 5-13 the proportion enrolled is about 98 percent. Among children 3 and 4 years old, however, nearly 40 percent of those residing in metropolitan areas attend school, compared with only 25 percent of the children who live in nonmetropolitan areas. The larger school enrollment of 3- and 4-year-olds in metropolitan areas may perhaps be attributed to the greater use made of nursery schools in such areas.

Most children live in families, but with the great increase in divorce and separation, many do not live in two-parent homes. About 85 percent of the white children in the population live with both father and mother. However, less than half of the nonwhite children live in households where both parents are present. For children the most frequent living arrangement other than the two-parent family is the family where only the mother is present; about 12 percent of the white children live in such households, compared with 39 percent of the nonwhite children. Only 1.5 percent of the white children, but 10 percent of the nonwhite children, live with relatives other than their parents. A relatively small number of children are not in families, but live with non-relatives.

Provisional data from the National Center for Health Statistics indicate that in the United States the expectation of life at birth is 73.3 years, although the expected lifetime among nonwhite children is significantly shorter than that of white children—69.4 years among nonwhite children, compared with 73.9 years for white children. In recent years, however, mortality among nonwhite children (as well as among nonwhite adults) has generally declined more rapidly than among the white population, leading to some narrowing of the differential in longevity.

CHARACTERISTICS OF CHILDREN UNDER AGE 14

United States, 1978

Characteristics	Under 14	Age Group Under 3	3-5	6-9	10-13
Number in thousands (July 1)					
1960	53,307	12,278	12,022	14,852	14,155
1970	53,783	10,195	10,707	16,145	16,738
1975	49,320	9,081	10,290	13,832	16,114
1978	46,739	9,311	9,131	13,804	14,493
1985 (projected)	47,901	11,455	10,842	12,767	12,839
Sex—percent	100.0	100.0	100.0	100.0	100.0
Male	51.0	51.1	51.1	51.0	51.0
Female	49.0	48.9	48.9	49.0	49.0
Race—percent	100.0	100.0	100.0	100.0	100.0
White	82.6	82.3	81.9	82.8	83.2
Nonwhite	17.4	17.7	18.1	17.2	16.8
School enrollment—percent					
Metropolitan areas	100.0*	‡	100.0†	100.0†	100.0
Enrolled in school	88.9	‡	39.4	98.2	99.0
Not enrolled in school	11.1	‡	60.6	1.8	1.0
Nonmetropolitan areas	100.0*	‡	100.0†	100.0†	100.0
Enrolled in school	85.9	‡	24.5	97.0	99.0
Not enrolled in school	14.1	‡	75.5	3.0	1.0
Living arrangements—percent					
White	100.0	100.0	100.0	100.0	100.0
In families	99.6	99.6	99.7	99.6	99.6
Living with both parents	84.9	88.1	85.9	84.4	82.6
Living with mother only	12.0	8.7	11.3	12.7	13.9
Living with father only	1.2	.7	.9	1.4	1.6
Living with neither parent	1.5	2.1	1.6	1.1	1.5
Not in families	.4	.4	.3	.4	.4
Nonwhite	100.0	100.0	100.0	100.0	100.0
In families	98.2	97.0	98.4	98.4	98.9
Living with both parents	47.5	43.5	46.9	48.8	49.5
Living with mother only	38.8	33.5	40.5	40.1	39.9
Living with father only	1.7	1.8	1.6	1.4	2.2
Living with neither parent	10.2	18.2	9.4	8.1	7.3
Not in families	1.8	3.0	1.6	1.6	1.1

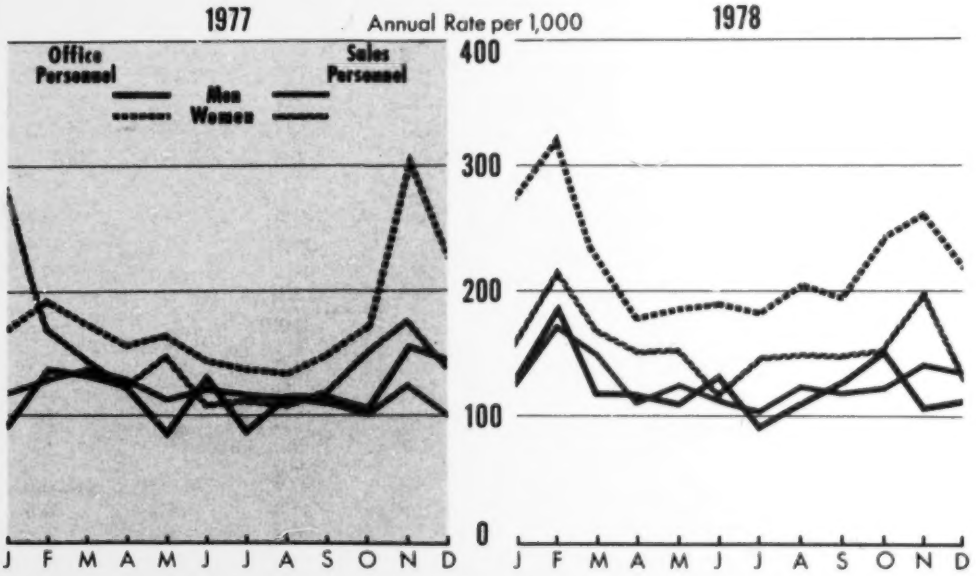
*Excludes ages under 3.
†Relates to ages 3-4 and 5-9, respectively.
‡Not available.

Note: Each figure is independently rounded; therefore, totals may not equal the sum of the parts.

Source of basic data: Reports of the Bureau of the Census.

Monthly Variation in Incidence of Disability, 1977 and 1978

Personnel of the Metropolitan Life Insurance Company



Disability lasting longer than a week. Claims classified according to month of initial payment. Personnel in the Pacific Coast States and Canada are not included.

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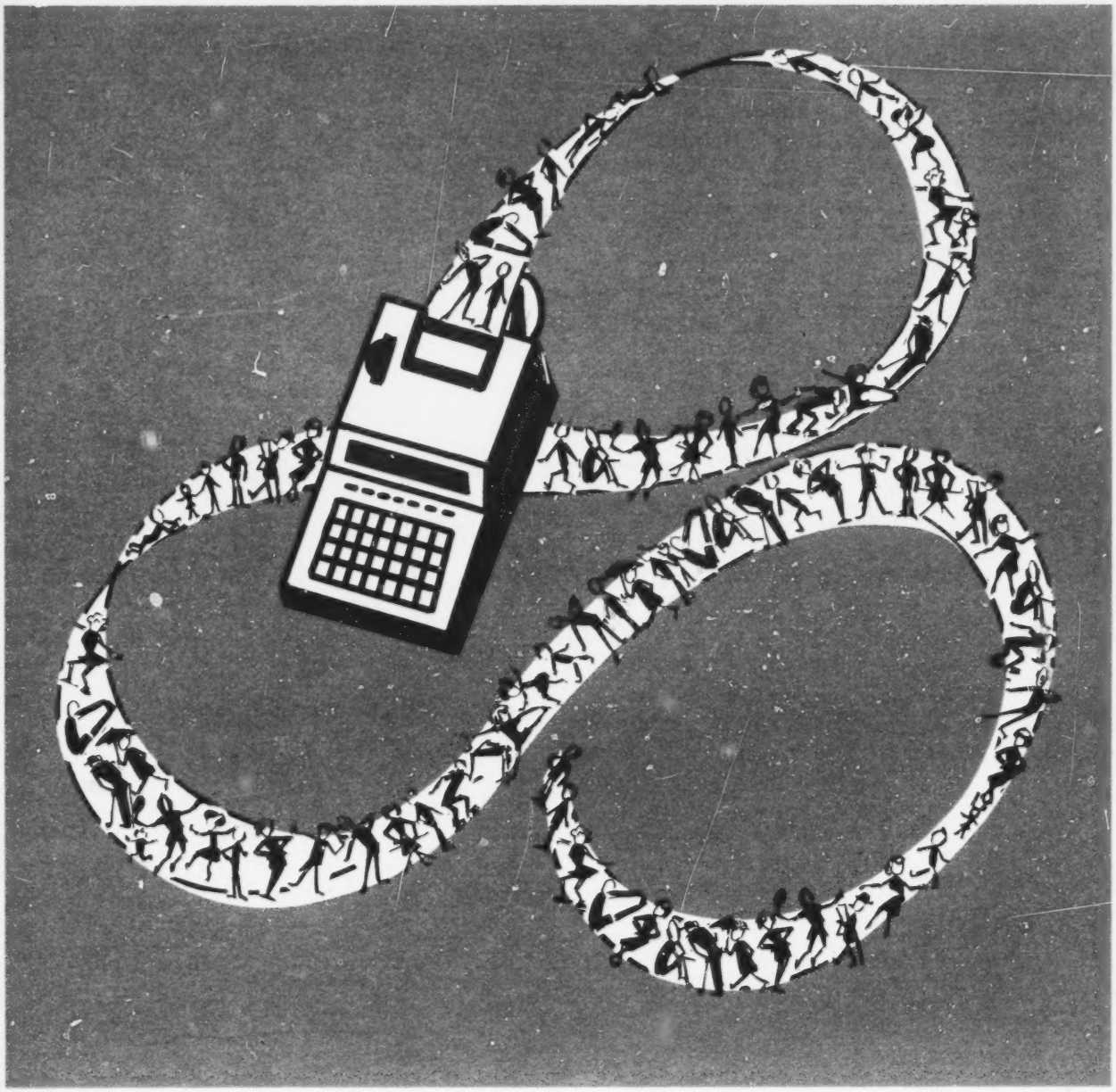
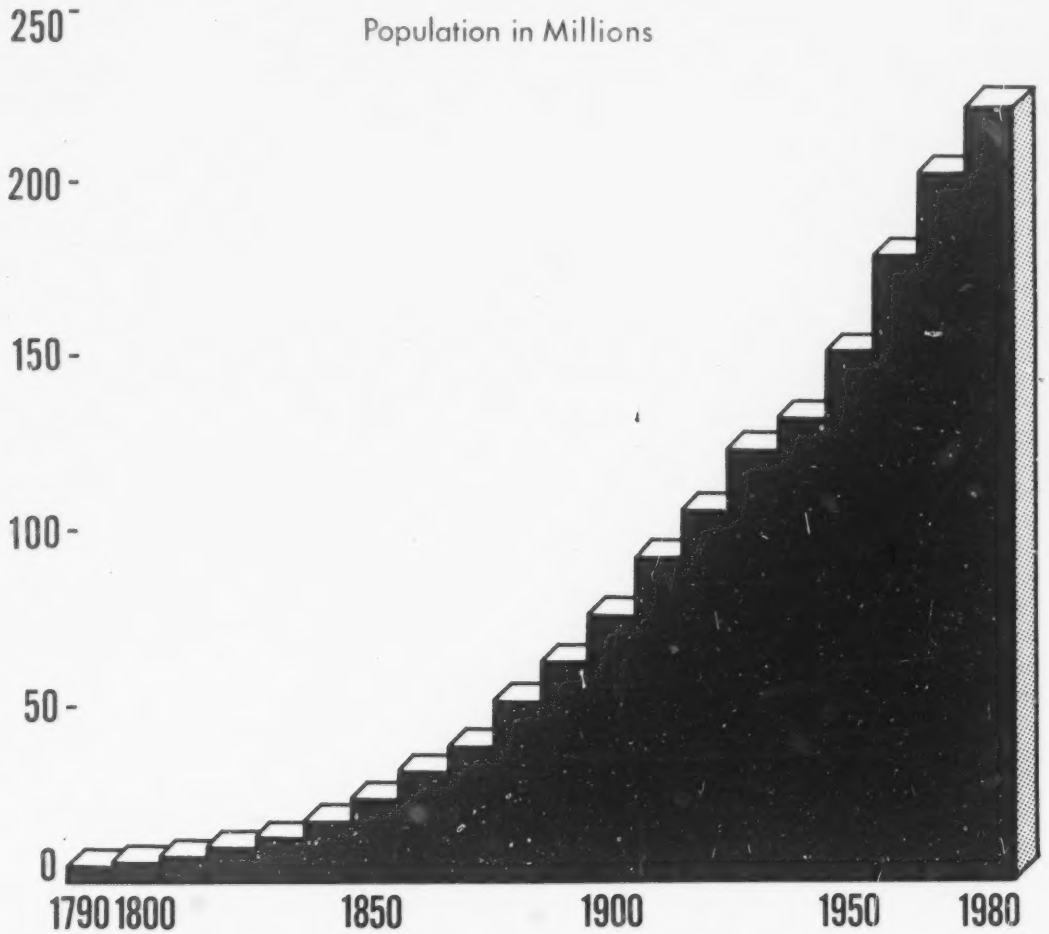


Census '80
Hazards in Helicopter Flying
Accident Death Toll in 1979
State Variations in Longevity
Venereal Diseases in the United States

Population Residing in the United States, 1790 to 1980



Note: Relates to all persons within the present boundaries of the United States who were under the jurisdiction of the United States on the census date.

Source of basic data: Bureau of the Census, 1970 PC(1)-1A; 1980 projection by the Statistical Bureau of the Metropolitan Life Insurance Company.

Census '80

Census Day—April 1, 1980—launched the largest and most expensive population count in the nation's history. The Twentieth Decennial Census of Population and Housing got under way with the official enumeration of all residents of the United States, as well as the inhabitants of Puerto Rico, the Virgin Islands of the United States, Guam, American Samoa, and the Trust Territory of the Pacific Islands.* Everyone must be counted except foreign tourists and diplomats. The cost of this statistical undertaking is estimated at more than a billion dollars.

The 1980 census of population, like each one since 1790, fulfills the mandate of Article 1, Section 2, of the Constitution, which directs that "The actual enumeration shall be made within three years after the first meeting of the Congress of the United States, and within every subsequent term of ten years, in such manner as they shall by law direct."

The 1790 census consisted of five questions designed to provide population information for apportioning members to the House of Representatives and to serve as a basis for taxation. This is still the primary objective of the census. With the passage of time, however, the scope of the census expanded significantly. In 1810 questions on industrial capacity were added. Questions on citizenship and on agriculture and mineral industries were added in 1820 and 1840. In 1860, six separate questionnaires posing 142 questions on health, literacy, pauperism, occupation, income, wealth, etc., became part of the census inquiry. By 1880, the new census office that had been created was swamped by the record number of census queries. Since 1900, only questions designed to generate broad social and economic data have been added from time to time. The 1980 census will gather more specific information about racial and ethnic origin, energy usage, and journey-to-work patterns.

Each of the 86 million households in the United States received a census questionnaire in the mail on March 28. Four out of five households were required to answer just 19 questions (seven population questions and 12 housing questions) on the short-form questionnaire. The remaining households were asked to complete the longer version which includes an additional 46 questions. In addition to the basic questions asked of everyone—age, sex, race, marital status, etc.—the expanded questionnaire includes questions on ancestry, education, employment, and income.

About 90 percent of the households were asked to mail back their completed questionnaires; enumerators will visit only those households which do not respond or have returned incomplete forms. Ten percent of the households—mainly those in sparsely settled areas—were instructed to hold their completed questionnaires until census takers pick them up.

The Census Bureau makes elaborate preparations to ensure that the decennial population counts are as complete and accurate as possible. In the past, however, despite great efforts, a sizable number of people have been missed during the enumeration of the decennial census. In the 1970 census, an estimated 5.3 million people were omitted—an undercount of 1.9 percent for whites but 7.7 percent for blacks.

To prevent or reduce the degree of such an undercount in 1980, several measures have been taken. Massive publicity programs have been mounted to make the public more aware of the census and to explain the uses of census data in order to encourage response. Special efforts have been made to reach the poor and the minorities, groups more likely to be subject to underenumeration. A number of census taking procedures have also been improved to reduce the possibility of people being missed.

A program such as the 1980 Special Place Operation has been inaugurated to count persons with no usual home who might otherwise be

*Mariana, Marshall, Palau, Yap, Truk, and Ponape Islands.

missed. On "transient night," people staying in hotels, motels, or YMCAs (or any place that costs more than $4.00 a night) are to be counted. On "mission night," people in missions, jails, etc. (or any place that costs less than $4.00 a night) are to be counted. A "casual count" is also to be made of people with no fixed address; over a three-week period people in employment offices, hiring halls, welfare offices, pool halls, etc., are to be sought out by enumerators and included in the census coverage.

Counting the illegal aliens in the United States is probably the most difficult problem facing the Census Bureau. The Supreme Court has ruled that illegal aliens are to be counted in the census. It is unlikely, however, that many will voluntarily participate; most of the illegal aliens fear discovery and deportation. The Census Bureau has tried to allay the fears of the illegal aliens by citing the confidentiality of the census questionnaire. Only Census Bureau employees, sworn to secrecy, may see individual census answers, and no census employee has ever been charged with a breach of this confidentiality.

Estimates by the Statistical Bureau of the Metropolitan Life Insurance Company indicate that the number of civilians and members of the armed forces residing in the United States on April 1 was close to 222 million—an increase of about 19 million from the official count 10 years ago. This gain represents a population rise of only 9 percent—the second smallest decennial increase in United States history. (The 1940 census reported a record low growth rate of 7.2 percent, which was attributed to the effects of the depression of the 1930s.) The growth of the resident population since the first census in 1790 in shown in the chart on page 2. Approximately another one million Americans (civilians and members of the armed forces) will be living outside the country on Census Day.

The 1980 census is expected to confirm some of the trends observed in annual population surveys during the intercensal period. Most significant has been the continued population shift to the South and the West from the northern and eastern states. An exception to this general trend occurred in the New England States of Maine, New Hampshire, and Vermont, where population gains have been substantial. Spectacular rates of decennial growth will probably be substantiated by the census count for Alaska, Nevada, Arizona, Wyoming, and Florida. Also likely to be verified is the reversal of the declining population trend in West Virginia, North Dakota, and South Dakota; these states are now gaining inhabitants.

California—the most heavily populated state in the nation—has had above-average growth during the decade, so that the number of its residents may very well reach 23 million on April 1—a population increase of about three million. On the other hand, the population of New York will decline somewhat from its 1970 level. Texas became the third most populous state in the mid seventies, displacing Pennsylvania whose population declined during the decade. Illinois and Ohio—the two other states in the nation with more than 10 million residents—are expected to experience only moderate population gains.

By law, the Census Bureau must report the state population counts to the President by January 1, 1981, for use in reapportioning seats in the House of Representatives. By April 1, 1981, the Bureau must make available to each state legislature population totals for all counties, cities, and other political subdivisions in the state. This information is used for the reapportionment of state legislatures and the redrawing of local district and ward boundaries in accord with the one-person, one-vote principle. Such census data also furnish guidelines for the distribution of billions of dollars in federal and state funds.

The 1980 census tabulations will yield a comprehensive statistical profile of the nation, with valuable information on the social and economic characteristics of the American people. In addition to government uses of census data, business firms rely on census statistics when selecting new plant sites, for evaluating sales programs, and for developing strategies for marketing their products. Census records may also be used to personal advantage such as to establish proof of age, to demonstrate relationship where inheritance may be involved, and for employment and naturalization purposes.

Hazards in Helicopter Flying

The use of rotorcraft (helicopters and gyrocopters) in civil aviation in the United States has grown rapidly in recent years. Most of the increase can be attributed to more extensive use of commercial services—such as air taxi transportation and aerial application in crop control—and to a significant rise in corporate and business flying.

Helicopters account for about 95 percent of all rotorcraft in active service and gyrocopters (used exclusively in amateur/home built aircraft flying) represent less than 5 percent of the total. Although both types of rotorcraft are propelled by top-mounted rotors, helicopter rotors are motor driven, while gyrocopter rotors usually obtain power from a ground vehicle tow.

Rotorcraft flying in general aviation (flying other than on public carriers) increased significantly in the 10-year period from 1968 to 1977. The number of active rotorcraft rose from 2,350 in 1968 to 4,700 in 1977, while the number of flight hours tripled (from an aggregate of 617,000 in 1968 to 1,900,000 in 1977). During the same period the number of pilots certified for rotorcraft flying increased from 17,607 to 28,566. The relatively smaller increase in number of pilots compared with the large increase in flight time indicates that pilots are now logging considerably more flight time in rotorcraft.

In contrast, there was a significant decrease in helicopter service on certificated route scheduled air carriers during this period. The number of active helicopters declined from 16 in 1968 to three in 1977, while the number of certified pilots dropped from 94 to fewer than 25. At the same time, the average trip length was reduced from 18 to 13 miles. The total number of passengers carried decreased from 3,489,000 in 1968-72 to 2,422,000 in 1973-77, or by 31 percent, while total helicopter flight hours fell by 32 percent, from 73,000 to 50,000. Even more substantial was the 73 percent decrease in the total number of helicopter flights from 495,000 in 1968-72 to 315,000 in 1973-77. Several reasons have been offered to explain the substantial decline in helicopter flying on certificated route air carriers: the loss of federal subsidies, higher fuel costs, a smaller market, and greater use of STOL (short take-off and landing) aircraft. By 1979, helicopter services were no longer offered by any certificated route air carrier.

Table 1 on page 6 shows the number of fatalities in rotorcraft accidents in general aviation during 1968-77 by the type of activity in which the aircraft was engaged at the time of the accident. There were 277 deaths among crewmen and pilots during the 10-year period and 214 passenger deaths. The 25 deaths classified as "others" included fatalities among occupants of fixed-wing aircraft in collision with rotorcraft as well as fatalities among persons on the ground who were injured by rotorcraft. About a third of the fatalities among crewmen and pilots occurred in commercial flying, with 38 deaths in air taxi-passenger flying and 16 in aerial application. Of the 77 fatalities among crewmen in noncommercial flying, 58 were attributed to pleasure and practice flying. Twenty-one crewmen died in helicopter accidents while engaged in police patrol or highway traffic surveys, and 18 were killed in instructional flying. Commercial flying accounted for nearly two thirds of all passenger deaths in helicopters during 1968-77, with 78 deaths in air taxi accidents and 40 in "other" commercial activities.

The 89 fatalities listed in Table 1 as unspecified as to type of flying can be traced to incom-

TABLE 1—FATALITIES IN ROTORCRAFT ACCIDENTS—GENERAL AVIATION

United States, 1968-77

	Number of Fatalities						
	1968-72		1973-77		1968-77		
Type of Flying	Crewmen*	Passengers	Crewmen*	Passengers	Crewmen*	Passengers	Others†
Instructional	9	1	9	—	18	1	—
Noncommercial	31	5	46	18	77	23	4
Pleasure	23	—	35	14	58	14	—
Business	4	2	6	2	10	4	2
Corporate	—	2	3	1	3	3	2
Other	4	1	2	1	6	2	—
Commercial	34	32	59	101	93	133	10
Air taxi—passenger	12	16	26	62	38	78	6
Aerial application	6	1	10	—	16	1	1
Fire control	1	4	2	3	3	7	2
Power and pipeline patrol, logging, and construction	7	3	1	4	8	7	1
Other	8	8	20	32	28	40	—
Miscellaneous	20	5	32	7	52	12	4
Test and demonstration	6	1	4	—	10	1	—
Ferry	8	3	3	1	11	4	1
Police patrol and highway traffic survey	—	—	21	3	21	3	3
Other	6	1	4	3	10	4	—
Unspecified	37	45	—	—	37	45	7
Total	131	88	146	126	277	214	25

*Includes pilots, co-pilots, dual student pilots, and non-pilot crew.
†Includes occupants of fixed-wing aircraft in collisions with rotorcraft and persons on the ground injured by rotorcraft.

Source of basic data: Reports of National Transportation Safety Board.

TABLE 2—FATALITY RATES IN HELICOPTER ACCIDENTS

United States, 1968-77

CERTIFICATED ROUTE SCHEDULED AIR CARRIERS

Years	Annual Average Passenger Fatality Rate			Annual Average Crewman Fatality Rate	
	Per 100,000 Passengers	Per 100,000 Flights	Per 100,000 Flight Hours	Per 100,000 Flights	Per 100,000 Flight Hours
1968-72	1.1	7.9	53.2	1.6	11.0
1973-77	.2	1.3	8.0	—	—
1968-77	.7	5.3	34.8	1.0	6.5

GENERAL AVIATION

Years	Annual Average Passenger Fatality Rate	Pilot Fatality Rate	
	Per 100,000 Flight Hours	Per 100,000 Pilots	Per 100,000 Flight Hours
1968-72	2.1	78.3	2.3
1973-77	1.7	85.5	1.5
1968-77	1.8	82.3	1.8

Source of basic data: Reports of National Transportation Safety Board, Federal Aviation Administration, and Civil Aeronautics Board.

plete information on rotorcraft accidents in 1971 and 1972. There were also 52 fatalities in gyrocopters in 1968-77—attributed to amateur/home built aircraft flying—which are not shown separately; these deaths were included under instructional, noncommercial, and miscellaneous types of flying. However, these fatalities have not been included in the computation of fatality rates.

There were 52 deaths in helicopter accidents on certificated route scheduled air carriers in 1968-77—eight among crewmen, 43 among passengers, and one "other". Thirty-nine of the passenger deaths and six of the crew deaths occurred in two major accidents in 1968; two additional crew deaths were recorded in 1969. No other deaths occurred until 1977 when five people died as a result of an accident at the Pan Am Heliport in New York City.

Fatality rates in rotorcraft accidents are shown in Table 2. In the 1968-72 period certificated route scheduled air carriers experienced an annual average fatality rate of 53.2 per 100,000 flight hours, but in the 1973-77 period the rate decreased to 8.0 per 100,000 flight hours. For the 10-year period there were 5.3 passenger deaths per 100,000 flights and 0.7 deaths per 100,000 passengers. In general aviation, the passenger death rate declined from 2.1 per 100,000 flight hours in 1968-72 to 1.7 in 1973-77, and averaged 1.8 per 100,000 flight hours for 1968-77.

Among crewmen on the air carriers the death rate from rotorcraft accidents was 11 per 100,000 flight hours in 1968-72, but with no deaths in the later five years, the annual average fatality rate fell to 6.5 per 100,000 flight hours for the 10 years under review. Measured by number of flights, the 10-year fatality rate was 1.0 per 100,000 flights. In general aviation the pilot fatality rate per 100,000 flight hours was 2.3 in 1968-72, 1.5 in 1973-77, with an annual average pilot fatality rate of 1.8 for 1968-77. For every 100,000 pilots, there were 78 deaths in 1968-72 and 86 deaths in 1973-77; the 10-year annual average was 82 per 100,000 pilots.

Accident Death Toll in 1979

Accidents caused an estimated 103,500 deaths in 1979, about 1,000 fewer than in the previous year. The provisional mortality rate from accidents in 1979 was 47.1 per 100,000 population, about 2 percent below the fatality rate of 47.9 in 1978.

There were approximately 51,900 fatalities from motor vehicle accidents in 1979, or 23.6 deaths per 100,000 population. The death rate was much the same as that recorded in 1978, but interrupted the steady upward trend in mortality since 1975. Preliminary data indicate that the fatality rate per 100 million vehicle miles traveled increased slightly to 3.5 in 1979.

Deaths from injuries in and about the home decreased during 1979 to a record low of 22,000, about 1,000 fewer than in the previous year. Public accidents, other than those involving motor vehicles, accounted for 21,000 deaths, about 500 fewer than in 1978. The number of job-related fatalities, however, rose slightly to about 13,100; approximately 4,400 of these deaths are included in the estimated 51,900 fatalities from motor vehicle accidents in 1979.

According to records maintained by the Statistical Bureau of the Metropolitan Life Insurance Company, nearly 900 persons in the United States died in catastrophic accidents during 1979. The death toll from catastrophes (accidents taking five or more lives) was about 100 lower than in 1978. There were significantly fewer deaths from catastrophic fires and explosions and from cataclysms (floods, blizzards, tornadoes, etc.), but heavier loss of life from motor vehicle and civilian aviation catastrophes. Civilian aviation accidents accounted for almost half of all catastrophic deaths in 1979, cataclysms for about a sixth, and fires and explosions for about a seventh.

During 1979 there were four major catastrophes, each of which caused 25 or more fatalities; in the aggregate they resulted in 372 deaths. The highest death toll in the nation's aviation history was recorded on May 25, when a DC-10 jumbo jetliner lost an engine and crashed shortly after takeoff from O'Hare International Airport in Chicago, Ill., killing all 271 persons on board and two others on the ground. The National Transportation Board ruled that the main cause of the crash was the "improper maintenance procedure" of the airline; the 10-inch crack in the engine mount, which caused the engine to rip away from the wing, was attributed to the airline's practice of removing the engine and its attaching structure (the pylon) as a single unit for maintenance. Other factors contributing to the disaster were the vulnerability to maintenance damage of the builder's pylon design, deficiencies in FAA surveillance of airline maintenance, and inadequacy of the airline's prescribed flight-takeoff instructions for handling this type of emergency situation. Some of the Safety Board's recommendations for preventing similar accidents have already been carried out by the FAA or by the airlines.

On April 10 a half-mile-wide tornado struck Wichita Falls, Texas, and killed 42 persons. Another major disaster occurred in the early morning hours of November 1, when a tanker carrying crude oil was rammed amidships by a freighter in the choppy waters of the Gulf of Mexico, off Galveston, Texas. Both ships burst into flames and 32 sailors—31 from the tanker and one from the freighter—were killed.

The fourth major disaster of 1979 occurred on April 2 at Farmington, Mo.; 25 persons died when a fire destroyed a concrete and granite boarding house. Residents of the home included elderly retired persons and some mental patients placed there by the Farmington State Hospital.

MAJOR CATASTROPHES IN THE UNITED STATES, 1975-79

Accidents Taking 25 or More Lives

Date	Place	Type of Accident	Number of Lives Lost
	1979		
May 25	O'Hare Airport, Chicago, Ill.	Crash of scheduled plane	273
April 10	Wichita Falls, Texas	Tornado	42
November 1	Gulf of Mexico Off Galveston, Texas	Collision of tanker and freighter	32
April 2	Farmington, Mo.	Fire in retirement home	25
	1978		
September 25	San Diego, Calif.	Collision of scheduled and private planes	144
January 25-27	Midwest	Blizzard	80
April 27	Willow Island, W.Va.	Collapse of scaffolding inside cooling tower of power plant under construction	51
February 5-7	Northeast	Severe snowstorm	50
August 2-3	Texas	Floods	27
	1977		
May 28	Southgate, Ky.	Fire in night club	165
July 20	Johnstown, Pa.	Floods	78
April 4	New Hope, Ga.	Crash of scheduled plane	71
January 27-February 1	Buffalo, N.Y., and Illinois, Indiana, Michigan, Ohio	Blizzard	51
November 6	Toccoa, Ga.	Collapse of earthen dam	39
December 22	Westwego, La.	Explosion of grain elevator	36
December 13	Evansville, Ind.	Crash of chartered plane	29
September 12-13	Kansas City, Mo.	Flash floods	26
	1976		
July 31	Big Thompson River Canyon, Colo.	Flash flood	145
October 20	Mississippi River	Collision of ferry and tanker	77
May 21	Martinez, Calif.	Crash of school bus	29
March 9-11	Near Whitesburg, Ky.	Explosions in coal mine	26
	1975		
June 24	New York, N.Y.	Crash of scheduled plane	113
January 10-12	Upper Midwest	Blizzard	34
November 10	Lake Superior, Mich.	Sinking of ore carrier during a storm	29
January 31	Delaware River, Pa.	Collision of two tankers	26

Note: Figures for natural disasters are approximate.

State Variations in Longevity

The average length of life has increased in all geographic areas of the United States but can vary from one state to another by as much as four years. To measure these differences and to update the figures shown in the State Life Tables for 1969-71,* the Statistical Bureau of the Metropolitan Life Insurance Company constructed abridged life tables for the white population of the 50 states and the District of Columbia. Table 1 on page 11 shows the average expectation of life in 1975 for white men and women at birth and at ages 25, 45, and 65.†

The most favorable longevity was enjoyed by white males in Connecticut, South Dakota, and Minnesota; in 1975 the expectation of life at birth among men in the three states was 70.9 years. The next highest life expectancy was 70.6 years in New Jersey and Florida, followed by 70.5 years in Arizona, and 70.4 years in Utah, North Dakota, and Wisconsin. In 13 other states the average expectation of life at birth was above the national average of 69.4 years. The lowest life expectancy was 66.9 years in West Virginia.

Among white females the expectation of life at birth was highest (79.2 years) in Florida. Seven other states recorded a life expectancy of at least 78 years—78.9 years in North Dakota, 78.7 years in Arizona and Minnesota, 78.3 years in Nebraska and South Dakota, 78.2 years in Utah, and 78.0 years in Colorado. At the other extreme, the expectation of life among women in West Virginia was 75.4 years, nearly four years lower than the average life expectancy in Florida, and almost two years below the national average of 77.2 years.

Comparison of the expectation of life at birth for 1969-71 with that for 1975 indicates that there has been some gain in longevity among white men. The largest increase—3.0 years—occurred in Arizona. Gains of at least two years were recorded in Florida (2.4 years), Nevada (2.1 years), and New York, New Hampshire, and New Jersey (2.0 years). Nearly all of the other states showed increased longevity of between one and two years. Only Utah, Kentucky, North Dakota, and Arkansas had gains of less than one year.

White women in each of the states under review also benefited from an increase in the expectation of life at birth between 1969-71 and 1975. The largest gain in life expectancy was that recorded in Arizona—3.1 years. Increases of at least two years were noted in Florida, New York, Colorado, and Massachusetts. The greater gains in longevity among the women in most states further widened the sex differential in longevity, from 7.6 years in favor of women in 1969-71 to 7.8 years in 1975.

Variations in life expectancy by state were about the same at the adult ages as they were at birth. The average remaining lifetime of white men aged 25 in 1975 ranged from 44.6 years in West Virginia to 48.3 years in Minnesota, Florida, and Arizona. Among white women at age 25, the average remaining lifetime varied from 52.3 years in West Virginia to 56.0 years in Florida. At age 45 white men in Florida and Arizona could look forward to 30.3 additional years, and women in Florida to 37.2 years. At age 65 the highest life expectancy among men (16.2 years) was recorded in Florida, while the lowest (12.9 years) was noted in Ohio, West Virginia, South Carolina, and Kentucky. Among women aged 65, the aver-

*See *Statistical Bulletin*, May 1976 and June 1976.

†Because the life expectancy figures for white men and women in Alaska, Hawaii, and the District of Columbia, and for white women in Wyoming and Nevada were based on small numbers, they are not considered reliable and are, therefore, excluded from the analysis.

TABLE 1—EXPECTATION OF LIFE AT BIRTH AND AT AGES 25, 45, AND 65

United States White Population, 1975

Area	Expectation of Life in Years							
	Male				Female			
	At Birth	Age 25	Age 45	Age 65	At Birth	Age 25	Age 45	Age 65
United States	69.4	46.9	28.5	13.7	77.2	53.8	34.8	18.1
New England								
Maine	68.9	46.0	27.6	13.1	76.5	53.1	33.9	17.4
New Hampshire	69.5	46.7	28.2	13.1	77.1	53.6	34.3	17.7
Vermont	69.3	46.7	28.1	13.3	76.2	52.8	33.8	17.1
Massachusetts	69.9	47.0	28.5	13.7	77.6	54.0	34.8	18.0
Rhode Island	70.2	47.3	28.6	13.7	76.7	53.2	34.0	17.3
Connecticut	70.9	48.1	29.5	14.1	77.9	54.3	35.1	18.1
Middle Atlantic								
New York	70.0	47.2	28.8	13.8	77.3	53.8	34.7	18.1
New Jersey	70.6	47.5	29.2	14.0	77.1	53.5	34.5	17.7
Pennsylvania	69.1	46.5	28.0	13.2	76.5	53.1	34.0	17.4
East North Central								
Ohio	69.0	46.3	27.8	12.9	76.4	52.9	33.9	17.3
Indiana	69.2	46.5	28.0	13.1	76.7	53.3	34.4	17.6
Illinois	69.0	46.5	28.0	13.2	76.7	53.4	34.4	17.7
Michigan	69.3	46.8	28.3	13.2	76.6	53.3	34.2	17.5
Wisconsin	70.4	47.8	29.2	13.8	77.9	54.4	35.2	18.2
West North Central								
Minnesota	70.9	48.3	29.6	14.2	78.7	55.2	36.1	18.8
Iowa	70.1	47.4	28.9	13.6	77.9	54.5	35.4	18.3
Missouri	69.0	46.5	28.1	13.4	77.4	54.2	35.2	18.6
North Dakota	70.4	48.0	29.6	14.0	78.9	55.4	36.2	19.0
South Dakota	70.9	48.2	29.6	14.1	78.3	55.1	36.1	18.5
Nebraska	70.2	47.8	29.2	13.9	78.3	55.0	35.8	18.8
Kansas	70.3	47.7	29.2	13.8	77.7	54.3	35.1	18.2
South Atlantic								
Delaware	69.5	46.8	28.1	13.6	77.0	53.2	34.2	17.5
Maryland	69.7	47.0	28.4	13.5	76.7	53.3	34.1	17.5
District of Columbia	70.3*	48.6*	30.2*	15.9*	78.4*	56.5*	37.6*	21.4*
Virginia	69.1	46.5	28.0	13.4	77.0	53.7	34.7	18.0
West Virginia	66.9	44.6	26.8	12.9	75.4	52.3	33.5	17.2
North Carolina	68.0	45.4	27.2	13.0	77.6	54.2	35.2	18.5
South Carolina	67.2	44.8	26.6	12.9	76.5	53.3	34.4	17.9
Georgia	67.6	45.2	27.1	13.1	76.6	53.3	34.3	17.7
Florida	70.6	48.3	30.3	16.2	79.2	56.0	37.2	20.7
East South Central								
Kentucky	67.5	45.0	27.0	12.9	76.0	52.9	34.0	17.5
Tennessee	68.5	46.0	27.9	13.5	77.0	53.7	34.8	17.9
Alabama	67.7	45.2	27.2	13.1	76.7	53.4	34.4	17.8
Mississippi	67.9	45.5	27.6	13.1	76.5	53.2	34.2	17.3
West South Central								
Arkansas	68.0	45.8	27.7	13.5	77.4	54.2	35.2	18.2
Louisiana	67.7	45.3	27.2	13.0	76.3	53.0	34.1	17.6
Oklahoma	69.1	47.2	29.1	14.4	77.4	54.3	35.6	18.5
Texas	69.0	46.7	28.5	13.7	77.3	54.1	35.2	18.4
Mountain								
Montana	69.1	47.0	28.7	13.7	76.9	53.7	34.8	18.0
Idaho	69.3	46.7	28.5	13.2	77.4	54.2	35.3	18.8
Wyoming	67.7	46.4	28.6	13.5	76.3*	53.7*	34.7*	18.1*
Colorado	70.2	47.5	29.3	14.1	78.0	54.7	35.6	18.9
New Mexico	68.5	46.2	28.5	13.4	76.6	53.6	34.7	18.0
Arizona	70.5	48.3	30.3	15.7	78.7	55.5	36.7	20.2
Utah	70.4	47.9	29.3	13.9	78.2	54.9	35.8	18.6
Nevada	68.1	46.0	27.9	13.5	75.7*	52.6*	34.0*	17.8*
Pacific								
Washington	69.8	47.3	28.8	13.5	77.2	53.9	34.9	18.1
Oregon	69.9	47.6	29.3	14.1	77.6	54.4	35.3	18.5
California	69.8	47.2	29.0	13.8	77.0	53.6	34.7	18.1
Alaska	73.0*	51.0*	33.1*	18.0*	79.9*	56.9*	38.0*	21.4*
Hawaii	72.7*	50.0*	30.9*	15.4*	79.6*	55.4*	36.1*	19.1*

*Based on fewer than 1,600 deaths; data considered too small to yield reliable results.

Source: Abridged life tables for 1975 computed by the Statistical Bureau of the Metropolitan Life Insurance Company.

TABLE 2—CHANCES OF SURVIVAL AT BIRTH AND AT AGES 25, 45, AND 65
United States White Population, 1975

Area	Male: Chances per 1,000 of Surviving 25 Years At Birth	Male: 20 Years Age 25	Male: 20 Years Age 45	Male: 10 Years Age 65	Female: Chances per 1,000 of Surviving 25 Years At Birth	Female: 20 Years Age 25	Female: 20 Years Age 45	Female: 10 Years Age 65
United States	961	955	756	633	977	976	872	798
New England								
Maine	965	955	734	603	978	980	861	781
New Hampshire	964	959	765	607	979	982	868	787
Vermont	960	960	756	630	977	976	868	792
Massachusetts	967	958	755	632	981	979	877	790
Rhode Island	966	966	758	630	980	980	867	789
Connecticut	965	965	785	658	981	981	882	809
Middle Atlantic								
New York	965	956	768	634	979	977	868	792
New Jersey	971	954	775	667	981	976	874	789
Pennsylvania	962	958	748	609	979	978	864	775
East North Central								
Ohio	962	960	748	59*	978	976	863	773
Indiana	962	959	753	614	978	974	870	786
Illinois	960	957	751	619	976	976	869	788
Michigan	960	958	761	619	977	977	868	782
Wisconsin	963	961	784	636	980	980	885	804
West North Central								
Minnesota	964	965	785	662	980	981	896	814
Iowa	963	962	774	645	978	979	888	816
Missouri	961	955	746	601	976	975	872	807
North Dakota	958	958	795	664	981	981	897	835
South Dakota	963	962	791	653	976	977	906	835
Nebraska	959	960	781	656	977	981	888	830
Kansas	961	961	783	647	978	980	882	813
South Atlantic								
Delaware	963	963	739	613	982	977	867	786
Maryland	964	962	758	634	979	979	866	787
District of Columbia	950*	957*	766*	709*	961*	975*	871*	834*
Virginia	961	956	742	608	977	977	870	804
West Virginia	955	939	703	594	973	972	849	772
North Carolina	960	948	718	603	978	976	875	810
South Carolina	957	947	692	597	976	974	862	784
Georgia	957	946	712	594	976	975	866	790
Florida	959	948	753	702	976	974	878	840
East South Central								
Kentucky	958	944	714	597	974	973	859	789
Tennessee	959	947	736	623	975	975	878	803
Alabama	958	945	715	596	977	977	866	802
Mississippi	958	943	730	623	976	976	873	794
West South Central								
Arkansas	956	946	725	630	976	976	882	812
Louisiana	956	946	717	595	975	974	863	784
Oklahoma	951	948	761	676	974	972	887	815
Texas	957	951	752	631	975	975	875	806
Mountain								
Montana	952	957	764	650	974	973	878	806
Idaho	960	953	771	618	976	974	865	813
Wyoming	938	942	767	652	967*	975*	869*	799*
Colorado	963	953	777	648	977	978	877	810
New Mexico	955	936	765	607	972	974	873	781
Arizona	954	948	768	703	976	973	876	836
Utah	960	961	786	657	975	979	894	816
Nevada	951	949	731	606	974*	966*	848*	800*
Pacific								
Washington	959	961	774	633	977	978	873	798
Oregon	957	957	774	658	975	978	878	812
California	960	952	774	640	978	974	866	799
Alaska	954*	948*	813*	760*	972*	977*	886*	884*
Hawaii	965*	977*	799*	678*	981*	982*	890*	821*

*Based on fewer than 1,600 deaths; data considered too small to yield reliable results.

Source: Abridged life tables for 1975 computed by the Statistical Bureau of the Metropolitan Life Insurance Company.

age remaining lifetime was highest in Florida (20.7 years) and least favorable in Vermont (17.1 years).

State variations in longevity are also reflected in the chances of surviving 10, 20, or 25 years. As shown in Table 2 on page 12, the chances of surviving from birth to age 25 were highest (971 per 1,000) among white men in New Jersey. In Wyoming, however, only 938 out of 1,000 males could expect to live to that age. The chances of surviving from age 25 to age 45 were 966 per 1,000 among white males in Rhode Island, but only 936 per 1,000 in New Mexico and 939 per 1,000 in West Virginia. At age 65 the probability of surviving another 10 years was more than a sixth greater for white men in Arizona than for those living in Ohio—703 chances per 1,000 in Arizona, compared with 591 per 1,000 in Ohio

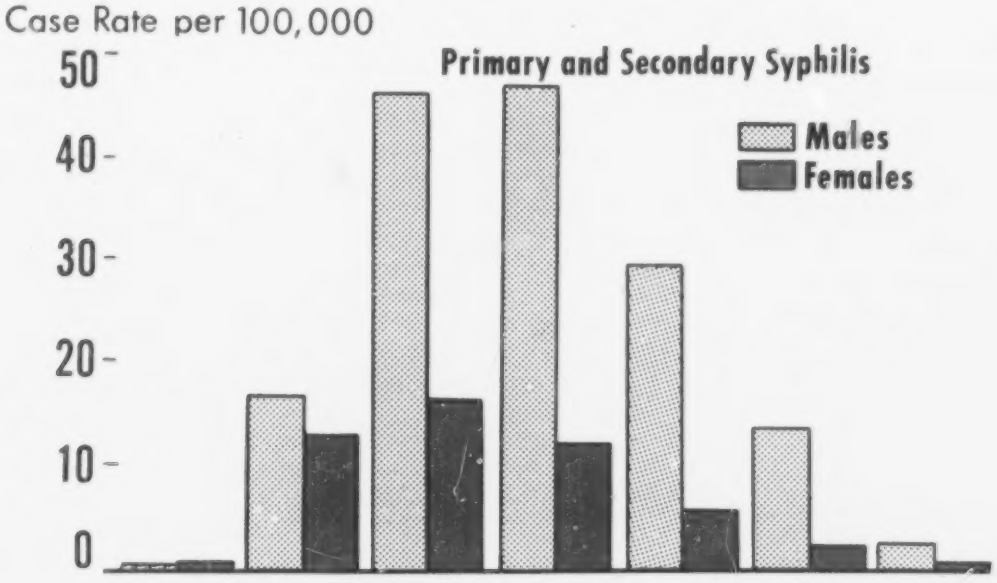
In every state there was a greater probability of survival among women than among men. The chances of living from birth to age 25 were 982 per 1,000 among women in Delaware, 981 per 1,000 in Connecticut, North Dakota, Massachusetts, and New Jersey, and 980 per 1,000 in Wisconsin, Rhode Island, and Minnesota. At age 25 the chances of living 20 additional years were 982 per 1,000 in New Hampshire, but only 972 per 1,000 in West Virginia and Oklahoma. At age 65 white women in Florida had the best chances of living to celebrate a 75th birthday—840 per 1,000; the probability of survival was also high in Arizona (836 per 1,000), North and South Dakota (835 per 1,000), and Nebraska (830 per 1,000). On the other hand, 65-year-old women in West Virginia and Ohio had the least chances of surviving to age 75—772 and 773 per 1,000, respectively.

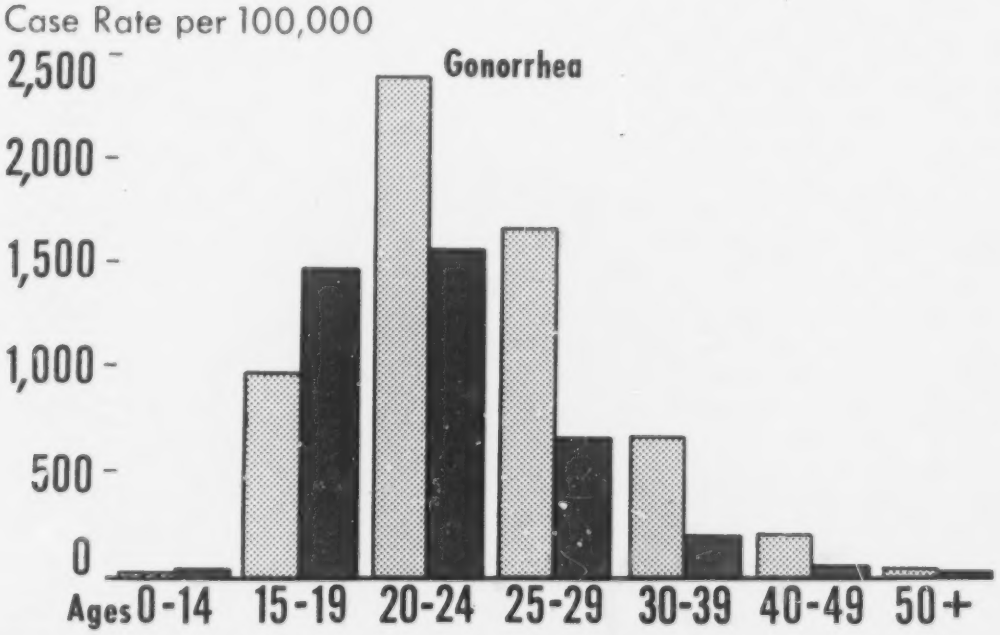
Venereal Diseases in the United States

Despite the availability of generally effective treatment, venereal diseases constitute a significant public health problem in the United States. Gonorrhea and syphilis (the major reportable venereal diseases) remain at a high level, while there has been a considerable increase in the nonreportable sexually transmitted diseases, such as genital herpes, nongonococcal urethritis, and trichomoniasis. The emergence of a new type of penicillin-resistant gonorrhea has also produced complications in the treatment of this disease.

Gonorrhea is the most frequently reported communicable disease in the United States; since 1976, more than a million cases a year have been recorded. Syphilis, with nearly 65,000 cases in 1978, ranks third among reportable diseases (exceeded only by gonorrhea and chicken pox). The incidence of gonorrhea increased from 159 cases per 100,000 in 1964 to a record high of 473 in 1975, and has remained close to that level, with 470 cases per 100,000 in 1976, 467 in 1977, and 468 in 1978. On the other hand, the incidence of syphilis declined from 60 cases per 100,000 in 1964 to a low of 30 per 100,000 in 1978. Because of the social stigma attached to sexually transmitted diseases, however, the number of reported cases is believed to be significantly understated. The Center for Disease Control estimates the extent of underreporting at 600,000 to 1,000,000

Incidence of Venereal Diseases By Age and Sex
United States Civilian Population, 1978





Source of basic data: Morbidity and Mortality Reports, Annual Summary, 1978, Center for Disease Control.

cases of gonorrhea and 55,000 to 60,000 cases of primary and secondary syphilis (the infectious stages). In addition, the Center estimates that about 325,000 persons have undiagnosed syphilis and are in need of treatment.

The accompanying chart shows the case rates by age for primary and secondary syphilis and for gonorrhea among men and women in 1978. More than 21,000 cases of primary and secondary syphilis were reported in that year. The incidence of the disease among males was more than three times that among females at all ages combined. Syphilis case rates at ages 0-14 were slightly higher among women than among men, but in all of the older age groups the incidence of syphilis among males ranged from one and a half to eight times higher than that among females. The highest incidence of primary and secondary syphilis among males was 46.9 cases per 100,000 at ages 25-29, followed closely by a rate of 46.0 at ages 20-24; the case rates fell to 29.2 at ages 30-39 and to 13.8 at ages 40-49. Among females the highest incidence (16.4 per 100,000) occurred at ages 20-24, but the next highest rate (12.7 per 100,000) was reported among those aged 15-19; the rates declined to 12.0 per 100,000 at ages 25-29, 5.7 per 100,000 at ages 30-39, and 2.1 at ages 40-49.

Reported cases of gonorrhea rose from 1,001,994 in 1976 to 1,002,219 in 1977, and reached a new high of 1,013,436 in 1978. More complete reporting has been attributed to increased surveillance by local, city, state, and federal agencies.

In 1978 the incidence of gonorrhea among males at all ages combined was 571.8 per 100,000, compared with 371.5 for females. As shown in the chart, both males and females had the highest reported incidence of gonorrhea at ages 20-24—2,410 per 100,000 among males and 1,569 per 100,000 among females. However, the incidence of gonorrhea among females at ages 15-19 was about 52 percent higher than that among males, and at ages under 15 was more than three times the rate for males. At all other ages the incidence among males was far greater than that for females.

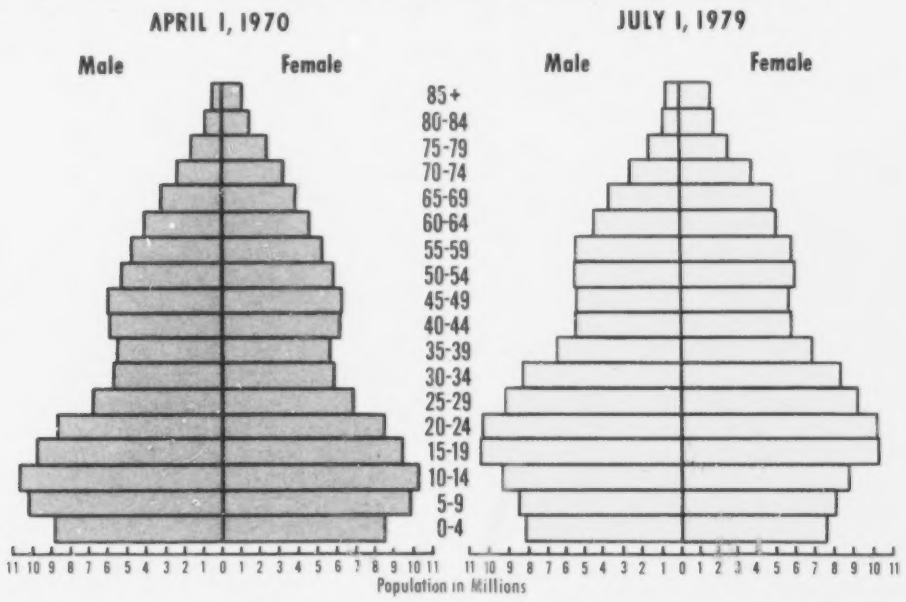
In recent years nonreportable sexually transmitted diseases have been increasing rapidly. The true incidence of these diseases is not known but the Center for Disease Control estimates a frequency of two to three million cases annually (about a million cases of trichomoniasis, 200,000 cases of genital herpes, 400,000 cases of genital warts, and a million cases of nongonococcal urethritis). Among homosexuals, there has been a significant increase in venereal diseases of anal and oral sites.

The discovery of a new strain of gonococci that is resistant to standard treatment with penicillin has been a cause for concern. Between March 1976 and December 1978, 508 cases were reported from 31 states, the District of Columbia, and Guam. Investigation as to the source of the disease indicates that half of these cases had been imported from Southeast Asia or the west coast of Africa. Several more powerful antibiotics are currently employed in treating the penicillin-resistant strain.

Mortality from venereal diseases is relatively low. In 1977 there were 196 deaths from all forms of syphilis and one death from gonorrhea. Nearly 50 percent of these deaths were attributed to cardiovascular syphilis and about 40 percent to syphilis of the central nervous system.

The morbidity from sexually transmitted diseases is a serious health problem and accounts for a significant share of health expenditures. Among women, some of the complications caused by gonorrhea are pelvic inflammatory diseases, disseminated gonococcal infection, Bartholin's abscess, and ectopic pregnancy. In 1977 these complications accounted for more than 75,000 hospital admissions, over 500,000 days of hospitalization, and more than 45,000 surgical procedures. The cost of treating these gonorrhea complications has been estimated at more than a quarter of a billion dollars. Among males, gonorrhea complications include disseminated gonococcal infection, epididymitis, prostatitis, and urethral stricture. Although cost figures for treatment of such complications are not available, the annual outlay is believed to be considerable. The more severe complications caused by syphilis include blindness, congenital damage, cardiovascular damage, and syphilitic psychoses. Treatment of syphilitic psychoses alone requires an estimated $60 million annually.

Age-Sex Distribution of United States Population*



*Including Armed Forces overseas.

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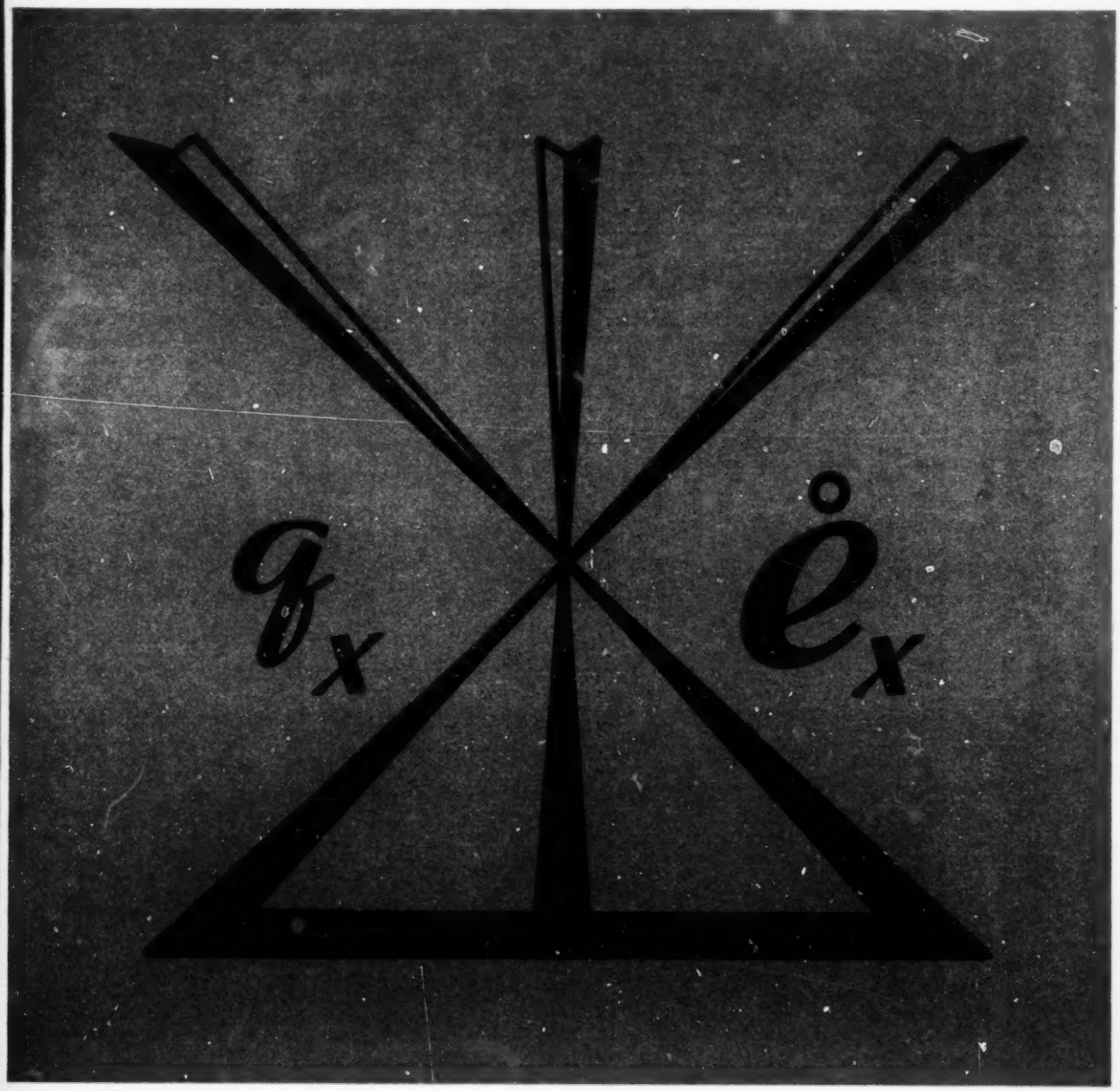

Mortality Differentials Favor Women
Accidental Poisoning
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Current Mortality Report

TABLE 1—EXPECTATION OF LIFE

United States, 1900 to 1977

Period	Expectation of Life in Years								
	At Birth	Age 5	Age 15	Age 25	Age 35	Age 45	Age 55	Age 65	Age 75
Male									
1977*	69.3	65.6	55.9	46.8	37.6	28.7	20.6	13.9	8.7
1969-71*	67.0	63.8	54.1	45.1	36.0	27.2	19.4	13.0	8.1
1959-61*	66.8	64.1	54.4	45.2	35.9	27.1	19.3	13.0	8.0
1949-51	65.5	63.1	53.6	44.4	35.2	26.6	19.0	12.7	7.8
1939-41	61.6	60.8	51.4	42.5	33.8	25.5	18.2	12.1	7.2
1929-31†	57.8	58.2	49.2	40.8	32.7	24.8	17.8	11.7	7.0
1919-21†	55.4	57.4	48.8	41.0	33.3	25.7	18.5	12.2	7.3
1909-11‡	49.9	55.1	46.7	38.6	30.9	23.8	17.0	11.2	6.8
1900-02‡	47.9	54.2	46.1	38.4	31.2	24.1	17.4	11.5	6.8
Female									
1977*	77.1	73.2	63.4	53.8	44.2	34.9	26.2	18.3	11.6
1969-71*	74.6	71.2	61.4	51.8	42.3	33.1	24.6	16.8	10.3
1959-61*	73.2	70.2	60.5	50.8	41.3	32.1	23.5	15.8	9.3
1949-51	71.0	68.2	58.5	49.0	39.6	30.6	22.3	15.0	8.9
1939-41	65.9	64.4	55.0	45.9	37.0	28.5	20.5	13.6	8.0
1929-31†	61.2	60.7	51.6	43.0	34.9	26.8	19.4	12.8	7.6
1919-21†	57.3	58.2	49.4	41.6	34.2	26.6	19.3	12.7	7.7
1909-11‡	53.2	57.4	48.9	40.7	33.0	25.4	18.1	12.0	7.2
1900-02‡	50.7	55.8	47.6	39.9	32.7	25.4	18.4	12.2	7.3
Difference Female-Male									
1977	7.8	7.6	7.5	7.0	6.6	6.2	5.6	4.4	2.9
1969-71	7.6	7.4	7.3	6.7	6.3	5.9	5.2	3.8	2.2
1959-61	6.4	6.1	6.1	5.6	5.4	5.0	4.2	2.8	1.3
1949-51	5.5	5.1	4.9	4.6	4.4	4.0	3.3	2.3	1.1
1939-41	4.3	3.6	3.6	3.4	3.2	3.0	2.3	1.5	.8
1929-31	3.4	2.5	2.4	2.2	2.2	2.0	1.6	1.1	.6
1919-21	1.9	.8	.6	.6	.9	.9	.8	.5	.4
1909-11	3.3	2.3	2.2	2.1	2.1	1.6	1.1	.8	.4
1900-02	2.8	1.6	1.5	1.5	1.5	1.3	1.0	.7	.5

*Includes Alaska and Hawaii.
†Weighted average of white and nonwhite life expectancy.
‡Original Death Registration States.
Source of basic data: Bureau of the Census and the National Center for Health Statistics.

Mortality Differentials Favor Women

Women in the United States continue to enjoy greater longevity than men throughout the life cycle. They have a greater life expectancy and lower mortality at every age. This advantage generally holds for the leading causes of death across the age spectrum, for both whites and nonwhites, and for the insured population as well as the general population.*

Table 1 on the opposite page shows the life expectancy at selected ages from birth to 75 years of age for males and females in the general population of the United States from 1900-02 to 1977. The expectation of life at birth was 1.9 years greater among women than among men in 1919-21; by 1969-71 the differential in favor of women had grown to 7.6 years and reached 7.8 years in 1977. This female longevity advantage decreases with age, falling from 7.8 years at birth in 1977 to 2.9 years at age 75. However, the differential in favor of females increased at each age from 1969-71 to 1977, as had been the case in each decennial period since 1919-21.

When examined on a percentage basis (female/male ratio), the life expectancy advantage of women increased steadily during this 50-year period. Between 1969-71 and 1977, however, the ratio increased only at ages 65 and 75, and remained unchanged for the other ages shown in the table. Life expectancy at birth had been 3 percent greater for women than for men in 1919-21; by 1969-71 the differential had grown to 11 percent and remained at that level in 1977.

In the United States, males have in nearly all cases been subject to greater mortality than females since the beginning of the century, as indicated by the sex ratios of mortality shown in Table 2. For all ages combined on an age-adjusted basis, the extra mortality among males has continued to rise—from a 7-percent excess in 1920 to 80 percent in 1977. However, the average annual percent increase slowed somewhat between 1970 and 1977, and in some age groups (under 1 and 55-64) the male mortality disadvantage actually diminished. In general, the differential remains high, ranging from 26 percent higher mortality among males at ages 1-4 to 185 percent at ages 15-24. Recent mortality changes have been small at ages under 15 and there has been no change at ages 45-54. The sex differential has continued to widen, however, at ages 15-44 and 65 and over.

An examination of the sex differentials in mortality from the leading causes of death for the total United States population (shown in Table 3) indicates that in 1977 mortality among males was considerably higher than that among females for nearly all causes. Death rates among males fell below the rates for females, and then generally by only a small margin, only in the case of malignant neoplasms at ages 25-44, cerebrovascular diseases at ages under 1 and 85 and over, influenza and pneumonia at ages 5-14, and diabetes mellitus at ages 75 and over. The greatest extra mortality among males was caused by the chronic respiratory diseases at ages under 1, accidents at ages 1-14 and 25-34, suicide at ages 15-24 and 65 and over, and homicide at ages 35-64.

*See also December 1971 and August 1974 issues of the *Statistical Bulletin*.

TABLE 2—SEX RATIO OF MORTALITY, BY AGE

United States, 1900 to 1977

Ratio of Male to Female Mortality (%)

Year	All Ages*	Under 1	1-4	5-14	15-24	25-34	35-44	45-54	55-64	65-74	75-84	85 and Over
1977	180	127	126	162	285	242	184	185	197	197	161	128
1970	175	129	124	159	277	212	174	185	208	189	150	115
1960	161	132	121	149	248	176	163	188	193	171	133	111
1950	145	131	120	145	188	152	148	166	171	148	124	113
1940	129	130	117	132	126	123	130	145	145	129	117	108
1930†	119	127	115	124	109	110	121	128	125	119	112	107
1920†	107	128	109	113	96	90	103	108	110	108	105	103
1910†	116	124	109	106	114	113	126	126	121	112	109	104
1900†	110	123	107	99	103	101	109	111	112	111	108	105

*Adjusted on basis of age distribution of the United States total population, 1940.
†Death registration states.
Source of basic data: Reports of Division of Vital Statistics, National Center for Health Statistics.

Death rates from the leading causes of death in 1977 and the sex differentials in mortality for both whites and nonwhites are presented in Table 4 on page 6. For all causes combined, boys at the preschool ages (1-4) in both races experienced a mortality rate about one fourth greater than girls. The greatest sex differential in mortality occurred at ages 15-24 for both races—with the death rate for males reaching 292 percent of that for females among whites and 256 percent among nonwhites. Although the differential decreases at the higher ages, the male/female mortality ratio never falls below 140 percent for all causes combined.

In each age group under 45 the highest mortality among males of both races arose from external causes of death—accidents, suicide, or homicide—rather than from disease. At ages 45-64, the greatest sex differential in mortality among whites was attributed to diseases of the heart, and at ages 65 and over to malignant neoplasms. Among nonwhites the sex ratio of mortality was greatest for accidents in both these age groups.

For both races there was substantial excess mortality among females only from malignant neoplasms at ages 25-44; this has been attributed to the high death rates from cancer of the breast and reproductive organs among women at these ages. Among nonwhite females there was some excess mortality from congenital anomalies and from influenza and pneumonia, but the death rates from these causes were relatively low.

The percent distribution of causes of death varies both by sex and race as well as by age. Among whites at ages 15-24, accidents caused about 60 percent of the male deaths and 50 percent of the female deaths, while homicide was responsible for about 7 percent of the deaths for both sexes. Among nonwhites, however, 37 percent of the male deaths and 26 percent of the female deaths were attributed to accidents, but more than 30 percent of the male deaths and 20 percent of the female deaths resulted from homicide.

Sex differentials in mortality among insured lives are shown in Table 5 on page 7. This in-

sured group is largely urban and middle class, and usually employed in nonhazardous occupations in the professions, business, and trade. The 1972-77 intercompany experience among persons insured under Standard Ordinary policies issued 6 to 15 years earlier to applicants who had been medically examined showed that men had higher mortality than women at all ages, with the male to female mortality ratio ranging from a low of 115 percent at ages 10-29 to a high of 385 percent at ages 1-9 for all causes of death combined. In general, men experienced higher mortality than women for each of the causes of death shown in the table except malignant neoplasms and cerebrovascular diseases.

Among those insured under Standard Ordinary policies issued without medical examination, mortality from malignant neoplasms and from pneumonia and influenza was higher for women than for men, while mortality from the cerebrovascular diseases was about the same for both sexes. However, mortality from accidents and homicides, suicide, and diseases of the heart and circulatory system was considerably higher for men. The mortality experiences under medical and nonmedical life insurance issues are not directly comparable because of the effects of insurance company selection practices which require a medical history or medical examination because of age or the amount of insurance applied for.

Higher mortality among men than women throughout the life cycle has been attributed to both genetic and environmental factors. Supporting the genetic theory are many studies of both animals and human beings that show nearly universal inferior male longevity.[1] With only a few exceptions among the developing countries, women in most parts of the world have more favorable life expectancy than men. Recent biological research indicates that genes associated with the X chromosomes have been linked with male immunological deficiencies. Females have two such chromosomes to one for males.

TABLE 3—SEX RATIO OF MORTALITY FROM LEADING CAUSES OF DEATH

United States, 1977

Ratio of Male to Female Mortality (%)

Cause of Death	All Ages*	Under 1	1-4	5-14	15-24	25-34	35-44	45-54	55-64	65-74	75-84	85 and Over
All Causes	180	127	126	162	285	242	184	185	197	197	161	128
Diseases of heart	206	136	105	113	163	237	333	351	284	216	153	121
Malignant neoplasms	150	138	131	144	165	98	84	107	141	184	193	184
Cerebrovascular diseases	121	98	100	†	109	110	104	115	136	140	116	99
Accidents	282	128	141	207	360	427	340	290	260	215	167	141
Influenza and pneumonia	187	129	126	90	150	156	167	197	223	231	193	155
Bronchitis, emphysema and asthma	322	175	†	†	†	†	117	174	245	394	516	415
Cirrhosis of liver	219	100	†	†	†	217	203	210	229	231	235	215
Suicide	290	†	†	†	411	296	230	203	278	401	629	1,090
Diabetes mellitus	102	†	†	†	†	131	127	124	102	100	90	96
Arteriosclerosis	129	†	†	†	†	†	†	267	189	160	128	102
Homicide	360	111	120	118	329	419	416	424	375	311	206	247

*Adjusted on basis of age distribution of the United States total population, 1940.

†Mortality rates less than 0.5 per 100,000 population; ratio not computed.

Source of basic data: Unpublished data from Division of Vital Statistics, National Center for Health Statistics.

TABLE 4—MORTALITY FROM LEADING CAUSES OF DEATH*

United States, 1977

Cause of Death	WHITE					NONWHITE				
	Death Rate per 100,000		Percent Male of Female Death Rate	Percent of All Causes		Death Rate per 100,000		Percent Male of Female Death Rate	Percent of All Causes	
	Male	Female		Male	Female	Male	Female		Male	Female
Ages 1-4										
All Causes	69.7	55.0	127	100.0	100.0	108.1	87.1	124	100.0	100.0
Accidents	29.4	20.8	141	42.2	37.8	42.9	30.7	140	39.7	35.2
Congenital anomalies	8.6	8.5	101	12.3	15.5	9.7	10.4	93	9.0	11.9
Malignant neoplasms	6.2	4.5	138	8.9	8.2	4.6	4.5	102	4.3	5.2
Influenza and pneumonia	2.9	2.3	126	4.2	4.2	6.0	4.8	125	5.6	5.5
Homicide	1.9	1.6	119	2.7	2.9	8.2	6.3	130	7.6	7.2
Ages 5-14										
All Causes	40.6	25.3	160	100.0	100.0	52.8	31.0	170	100.0	100.0
Accidents	21.7	10.9	199	53.4	43.1	30.8	12.4	248	58.3	40.0
Malignant neoplasms	5.8	3.9	149	14.3	15.4	4.8	3.7	130	9.1	11.9
Congenital anomalies	1.9	1.7	112	4.7	6.7	1.9	2.2	86	3.6	7.1
Homicide	.9	.9	100	2.2	3.6	2.9	2.4	121	5.5	7.7
Influenza and pneumonia	.9	.9	100	2.2	3.6	1.1	1.2	92	2.1	3.9
Ages 15-24										
All Causes	167.3	57.2	292	100.0	100.0	205.1	80.1	256	100.0	100.0
Accidents	101.1	28.3	357	60.4	49.5	76.6	20.6	372	37.3	25.7
Suicide	22.9	5.5	416	13.7	9.6	15.5	4.0	388	7.6	5.0
Homicide	11.5	3.9	295	6.9	6.8	65.5	16.9	388	31.9	21.1
Malignant neoplasms	8.4	4.8	175	5.0	8.4	6.4	5.8	110	3.1	7.2
Diseases of heart	2.6	1.5	173	1.6	2.6	6.5	4.1	159	3.2	5.1
Ages 25-44										
All Causes	211.6	104.0	203	100.0	100.0	508.9	221.5	230	100.0	100.0
Accidents	62.5	16.5	379	29.5	15.9	99.2	20.6	482	19.5	9.3
Diseases of heart	35.0	9.8	357	16.5	9.4	66.8	30.7	218	13.1	13.9
Malignant neoplasms	26.3	30.3	87	12.4	29.1	37.7	39.9	94	7.4	18.0
Homicide	14.2	3.9	364	6.7	3.8	109.1	19.7	554	21.4	8.9
Suicide	25.9	10.1	256	12.2	9.7	21.7	6.1	356	4.3	2.8
Ages 45-64										
All Causes	1,259.0	646.6	195	100.0	100.0	1,956.8	1,103.5	177	100.0	100.0
Diseases of heart	526.9	161.7	326	41.9	25.0	623.3	331.3	188	31.9	30.0
Malignant neoplasms	324.7	262.3	124	25.8	40.6	487.0	307.4	158	24.9	27.9
Accidents	60.2	22.9	263	4.8	3.5	110.8	32.7	339	5.7	3.0
Cerebrovascular diseases	50.5	39.1	129	4.0	6.0	134.8	103.8	130	6.9	9.4
Cirrhosis of liver	50.9	23.0	221	4.0	3.6	88.1	40.5	218	4.5	3.7
Ages 65 and Over										
All Causes	6,545.4	4,447.0	147	100.0	100.0	6,218.8	4,435.8	140	100.0	100.0
Diseases of heart	2,894.8	1,999.9	145	44.2	45.0	2,331.4	1,851.0	126	37.5	41.7
Malignant neoplasms	1,330.0	752.1	177	20.3	16.9	1,414.0	707.6	200	22.7	16.0
Cerebrovascular diseases	647.5	655.5	99	9.9	14.7	729.4	706.1	103	11.7	15.9
Influenza and pneumonia	214.3	142.3	151	3.3	3.2	211.3	108.2	195	3.4	2.4
Accidents	129.6	83.9	154	2.0	1.9	146.0	72.3	202	2.3	1.6

*Listed according to rank among all males in 1977.

Source of basic data: Prepublished data from the National Center for Health Statistics, and Bureau of Census, Current Population Reports.

TABLE 5—SEX RATIO OF MORTALITY FROM LEADING CAUSES OF DEATH

Intercompany Standard Ordinary Insured Lives, Policy Years 6-15, 1972-77

Ratio of Male to Female Mortality (%)

Age at Issue	All Causes Combined	Malignant Neoplasms	Diabetes Mellitus	Cerebro-vascular Diseases	Diseases of Heart and Circulatory System	Pneumonia and Influenza	Accidents and Homicide	Suicide
Medical Issues								
All Ages*	144	94	157	84	295	136	191	159
0	246	91	†	†	†	†	245	†
1-9	385	357	†	300	1,725	†	288	900
10-29	115	135	†	43	208	350	146	72
30-39	119	61	300	56	329	85	186	145
40-49	160	93	233	86	397	147	280	266
50 and over	166	140	98	122	231	166	149	390
Nonmedical Issues								
All Ages*	162	91	†	103	305	90	267	185
0	144	110	†	†	121	108	179	†
1-9	221	204	†	†	104	†	281	442
10-29	170	106	†	89	228	75	281	195
30-39	138	72	175	97	361	100	216	135
40-49	178	100	313	130	408	176	234	172
50 and over	204	52	†	†	457	†	†	†

*Female mortality rates adjusted on basis of age distribution of male intercompany Standard Ordinary insured lives.
†Mortality rates less than 0.5 per 100,000; ratio not computed.
Source of basic data: 1977 Reports of Mortality and Morbidity Experience, Transactions, Society of Actuaries.

Thus males are more susceptible to infection and have a poorer chance of survival. In addition to such biological differences, environmental factors complicate analysis of sex differentials in mortality. Deaths due to violence and accidents are much more frequent among men than women. More men than women engage in dangerous occupations and avocations and are more apt to smoke and drink alcoholic beverages.

In recent years lower occupational mortality has favored men more than women, narrowing the sex differential to some degree. The increase in smoking among women and the corresponding decline among men may also narrow the mortality gap in the future—with important implications for the future trends in mortality from cancer and heart disease. On the other hand, mortality attributed to the many new and popular high-risk avocations (such as hang gliding, sky diving, and scuba diving), in which more males than females participate, has had the reverse effect, tending to widen the mortality differential between the sexes. Decreasing fertility and lower maternal mortality have also contributed to improved mortality among women and a widening of the sex differential in recent years.

The sex differential has fluctuated within a very narrow range (between 7.6 and 7.8 years) during the past decade. Provisional data for 1979 indicate that the life expectancy at birth for women in the United States still exceeds that for men by 7.7 years.

[1]Retherford RD: The changing sex differential in mortality. Studies in Population and Urban Demography No. 1. Westport, Conn.: Greenwood Press, 1975.

Accidental Poisoning

Accidental poisoning by solid and liquid substances caused 3,374 deaths in the United States in 1977, the latest year for which official figures are available. It was the second leading cause of accidental death at ages 25-34, outranked only by motor vehicle accident fatalities. Although the death rate from poisoning rose steadily from 1.29 per 100,000 population in 1968 to 2.20 in 1975, there was a reversal of the trend in 1976, with a decrease in the death rate to 1.94 and a further decline to 1.56 in 1977. However, the death rate in 1977 was still a fifth higher than that in 1968.

The increase in mortality from poisoning since 1968 was due primarily to a rise of about 30 percent in the death rate at ages 25-44 (from 1.85 per 100,000 in 1968 to 2.39 in 1977), and an increase of 25 percent at ages 65 and over (from 1.34 to 1.67 per 100,000). Smaller increases were recorded in the 15-24 and 45-64 age groups. The fatality rate among school-aged children did not change appreciably, but the rate among children under 5 years of age dropped by about 60 percent.

Males were the victims in six out of every 10 deaths from poisoning in 1977. For all ages combined, the death rate among males was 1.92 per 100,000, compared with 1.22 among females. The sex differential in mortality was small at ages under 15, but the death rates among males at ages between 15 and 44 were more than twice those among females. At ages 45-64, however, the fatality rate for males was about a tenth *lower* than the rate among females.

During the 1968-77 period, there were sizable increases in mortality from accidental poisoning among women at all ages over 14. Mortality from this cause doubled at ages 15-24, rose by more than 20 percent at ages 25-64, and increased by 50 percent at ages 65 and over. A sizable increase (34 percent) in the mortality from poisoning among men was recorded at ages 25-44, bringing the fatality rate to 3.30 per 100,000 population. The highest mortality among women (1.90 per 100,000) occurred at ages 45-54.

In 1977 drugs and medicaments caused two thirds of all deaths from accidental poisoning by solid and liquid substances. However, the relative importance of the various drugs responsible for such fatalities has changed in recent years. (See Table 1.) The tranquilizers and other analgesics and sedatives (excluding aspirin and related salicylates) accounted for almost two fifths of all accidental deaths from drug poisoning in 1968; by 1977 this proportion had declined to one fifth. There were 263 deaths from such drugs among males, with the heaviest toll at ages 25-44. Of the 209 deaths among females, two thirds occurred at ages 25-64.

Barbiturates accounted for about a fifth of all deaths from drug poisoning in 1968, but were responsible for less than a tenth of the total in 1977. Fatalities from barbiturate poisoning remained slightly higher among women than among men. During the 10-year period there was a 50-percent drop in the number of deaths from poisoning by aspirin and related salicylates. Aspirin products were once considered the major poisoning problem among children under 5 years of age; between 1968 and 1977, however, fatalities from aspirin poisoning diminished by about four fifths.

Deaths from accidental ingestion of morphine, heroin, and other opiates increased from 229 in 1968 to a high of 854 in 1976. Although fatalities

TABLE 1—DEATHS FROM ACCIDENTAL POISONING BY SOLIDS AND LIQUIDS

United States, 1968 and 1977

Agency of Poisoning	1968	1977						
	All Ages	All Ages	Under 5	5-14	15-24	25-44	45-64	65 and Over
All Causes								
Male	1,616	2,024	47	24	505	916	355	176
Female	967	1,350	47	16	204	433	434	216
Total	2,583	3,374	94	40	709	1,349	789	392
Drugs and medicaments								
Male	1,063	1,258	26	13	369	588	143	119
Female	629	956	31	13	157	305	273	177
Total	1,692	2,214	57	26	526	893	416	296
Barbiturates								
Male	151	96	1	—	27	35	21	12
Female	170	112	2	—	23	38	28	21
Total	321	208	3	—	50	73	49	33
Aspirin and related salicylates								
Male	63	22	7	—	—	3	6	6
Female	57	36	4	—	3	5	12	12
Total	120	58	11	—	3	8	18	18
Opiates and related narcotics								
Male	198	271	1	—	92	161	14	3
Female	31	73	1	1	27	36	8	—
Total	229	344	2	1	119	197	22	3
Tranquilizers and other analgesics and sedatives								
Male	467	263	4	3	71	143	34	8
Female	179	209	9	4	34	75	67	20
Total	646	472	13	7	105	218	101	28
Other and unspecified								
Male	184	606	13	10	179	246	68	90
Female	192	526	15	8	70	151	158	124
Total	376	1,132	28	18	249	397	226	214
Other solid and liquid substances								
Male	553	766	21	11	136	328	212	57
Female	338	394	16	3	47	128	161	39
Total	891	1,160	37	14	183	456	373	96

Source of basic data: Reports of the Division of Vital Statistics, National Center for Health Statistics.

dropped to 344 in 1977, the death toll was still 50 percent higher than that recorded in 1968. More than 90 percent of such deaths occurred at ages 15-44, and almost 80 percent were among males.

The number of fatal poisonings attributed to "other and unspecified drugs" has shown a marked increase in recent years. Such drugs accounted for about a fifth of all drug fatalities in 1968, but were responsible for half of all drug deaths in 1977. This category, which includes antibiotics, hormones, systemic and hemotologic agents, central nervous system depressants and stimulants, and drugs used for cardiovascular and gastrointestinal disorders, expands each year with the introduction of new drugs for the management of a wide variety of medical conditions.

About a third of all deaths from accidental poisoning by solids and liquids were caused by non-drug substances such as alcohol, cleaning and polishing agents, petroleum products, paints

and varnish, arsenic and lead, corrosives and caustics, pesticides and fertilizers, and poisonous plants. The number of such poisoning fatalities increased from about 900 in 1968 to more than 1,500 in 1975, but declined to 1,160 in 1977. Among preschool children, such poisoning fatalities have dropped by almost 75 percent during the past 10 years.

The National Clearinghouse for Poison Control Centers reported 156,330 cases in which poisonous substances were ingested in 1977. Although these are by no means the total number of such cases—many go unreported because patients are advised or treated by private physicians or hospitals not associated with Poison Control Centers—they are nevertheless representative of the total poisoning cases throughout the United States. The following table gives the age distribution of the 1977 victims.

POISONING CASES REPORTED BY POISON CONTROL CENTERS

United States, 1977

Age	Number of Cases
Under 1	9,986
1	30,908
2	34,154
3	14,254
4	5,647
5-9	6,853
10-14	4,295
15-24	16,160
25-44	11,551
45-64	3,292
65 and over	1,165
Unknown	18,065
Total	156,330

Children under 5 years of age accounted for 94,949 (almost 70 percent) of the 138,265 cases where the age was known; the risk of swallowing poisonous substances was greatest among two-year-olds. The number of victims in the 15-24 year age group was also high.

The substances most frequently ingested by children under 5 years of age are listed in Table 2 for the years 1972 and 1977. (These figures are based on phone inquiries and treated cases reported by the Poison Control Centers.) In 1977, plants were the most frequently involved substance among children in this age group, accounting for about one out of every eight case reports. Soaps, detergents, and cleaners ranked second (with about 6 percent of the total). Perfume, cologne, and toilet water moved from eighth place in 1972 to third in 1977. Aspirin, which had been the most frequently ingested substance in 1972, continued its decline of recent years and dropped to sixth place in 1977.

The Poison Control Centers have made a significant contribution to the major reduction in childhood poisonings. These centers—most of which maintain a 24-hour telephone service—provide physicians and others at the scene of the emergency with information on the toxic ingredients of household products and antidotes for them, so that proper treatment can be administered as quickly as possible.

The adoption of the Poison Prevention Packaging Act on December 30, 1970, provided another measure of protection from harmful or toxic substances for very young children. Under this Act, manufacturers of drugs, turpentine, and other household substances are required to provide special packaging for their products so that they cannot be opened by most children under 5 years of age. The regulations on aspirin packaging went into effect in August 1972. Since then, aspirin poisoning fatalities among children at ages under 5 have dropped dramatically. Non-fatal cases of aspirin poisoning among preschoolers have also shown a marked decline; the National Clearinghouse for Poison Control Centers reports a decrease in such cases from 8,146 in 1972 to 4,837 in 1974 and to 3,264 in 1977. Fatal and non-fatal poisoning from other drugs and household products among very young children have also declined since packaging regulations were promulgated.

In an attempt to reduce the misuse of drugs among teenagers and adults in the United States, the Controlled Substance Act was introduced by the Drug Enforcement Administration in 1970. The Act set up five drug schedules that classified drugs according to abuse potential, and made provision for limiting the number of times a pre-

TABLE 2—SUBSTANCES MOST FREQUENTLY INGESTED BY CHILDREN UNDER 5 YEARS OF AGE

United States, 1972 and 1977

Type of Substance	1972 Number	1972 Percent	1977 Number	1977 Percent
1. Plants	4,759	4.5	11,819	12.4
2. Soaps, detergents, cleaners	5,940	5.7	5,674	6.0
3. Perfume, cologne, toilet water	3,108	3.0	3,681	3.9
4. Antihistamines, medications for colds	4,355	4.1	3,661	3.9
5. Vitamins, minerals	5,320	5.1	3,622	3.8
6. Aspirin	8,146	7.8	3,264	3.4
Baby	5,305	5.1	2,211	2.3
Adult	1,322	1.3	491	.5
Unspecified	1,519	1.4	562	.6
7. Household disinfectants, deodorizers	3,301	3.1	2,813	3.0
8. Insecticides (excluding mothballs)	2,306	2.2	2,723	2.9
9. Miscellaneous analgesics	2,220	2.1	2,699	2.8
10. Miscellaneous internal medicines	3,186	3.0	2,403	2.5

Source of basic data: Reports of the National Clearinghouse of Poison Control Centers, Public Health Service.

scription might be refilled. Thus, drugs in Schedule II (including narcotic drugs such as opium, codeine, morphine, meperidine, etc.) can be dispensed only upon receipt of a written prescription which cannot be refilled. Drug prescriptions under other schedules may be transmitted to the pharmacist by telephone but such prescriptions must be committed to writing within 72 hours; prescriptions are valid for only six months from the date of issue and cannot be refilled more than five times. Drug classification is flexible; a drug could be placed under control, upgraded, downgraded, or even removed from control, as new evidence of abuse potential is uncovered. In addition to the federally sponsored Controlled Substance Act, state and local laws regulating the dispensing of drugs and their use have been enacted. Such legislation has been an important factor in reducing serious injuries and fatalities from drug poisoning.

Correspondence relating to this publication may be addressed:

THE EDITOR, STATISTICAL BULLETIN
Metropolitan Life Insurance Company
One Madison Avenue, New York, N.Y. 10010

Please notify us promptly of any change of mailing address.

TABLE 1—POPULATION OF THE UNITED STATES BY GEOGRAPHIC AREA, 1970 TO 1980

Area	Numbers in Thousands				Annual Percent Increase*	
	April 1 1970	January 1 1975	January 1 1979	January 1 1980	During 1979	1970 to 1980†
United States						
Including Armed Forces overseas	204,402	212,748	219,699	221,719	0.9	0.8
Excluding Armed Forces overseas	203,302	212,245	219,213	221,227	.9	.8
New England	11,847	12,144	12,282	12,309	.2	.4
Maine	994	1,053	1,095	1,100	.5	1.0
New Hampshire	738	810	878	897	2.2	2.0
Vermont	445	471	490	496	1.2	1.1
Massachusetts	5,689	5,784	5,771	5,771	—	.1
Rhode Island	950	935	931	928	— .3	— .2
Connecticut	3,032	3,091	3,116	3,117	—	.3
Middle Atlantic	37,213	37,194	36,776	36,635	— .4	— .2
New York	18,241	18,062	17,701	17,579	— .7	— .4
New Jersey	7,171	7,313	7,326	7,334	.1	.2
Pennsylvania	11,801	11,819	11,750	11,723	— .2	— .1
East North Central	40,263	40,897	41,263	41,373	.3	.3
Ohio	10,657	10,730	10,734	10,743	.1	.1
Indiana	5,195	5,316	5,395	5,422	.5	.4
Illinois	11,110	11,175	11,236	11,234	—	.1
Michigan	8,882	9,095	9,196	9,233	.4	.4
Wisconsin	4,418	4,583	4,703	4,741	.8	.7
West North Central	16,328	16,708	17,081	17,192	.6	.5
Minnesota	3,806	3,922	4,043	4,085	1.0	.7
Iowa	2,825	2,867	2,905	2,910	.2	.3
Missouri	4,678	4,776	4,858	4,891	.7	.4
North Dakota	618	638	655	658	.5	.6
South Dakota	666	681	690	689	— .1	.3
Nebraska	1,485	1,544	1,572	1,578	.4	.6
Kansas	2,249	2,281	2,359	2,380	.9	.6
South Atlantic	30,679	33,426	34,820	35,176	1.0	1.4
Delaware	548	578	583	582	— .2	.6
Maryland	3,924	4,107	4,149	4,153	.1	.6
District of Columbia	757	716	664	646	— 2.7	— 1.6
Virginia	4,651	4,957	5,188	5,213	.5	1.1
West Virginia	1,744	1,794	1,870	1,883	.7	.8
North Carolina	5,084	5,403	5,590	5,628	.7	1.0
South Carolina	2,591	2,794	2,916	2,948	1.0	1.3
Georgia	4,588	4,908	5,097	5,140	.8	1.1
Florida	6,791	8,171	8,762	8,981	2.5	2.8
East South Central	12,808	13,472	14,036	14,161	.9	1.0
Kentucky	3,221	3,374	3,509	3,547	1.1	1.0
Tennessee	3,926	4,159	4,357	4,405	1.1	1.2
Alabama	3,444	3,594	3,749	3,791	1.1	1.0
Mississippi	2,217	2,344	2,420	2,418	— .1	.9
West South Central	19,326	20,775	22,257	22,710	2.0	1.6
Arkansas	1,923	2,088	2,174	2,190	.7	1.3
Louisiana	3,645	3,802	3,999	4,055	1.4	1.1
Oklahoma	2,559	2,713	2,868	2,914	1.6	1.3
Texas	11,199	12,172	13,216	13,552	2.5	1.9
Mountain	8,290	9,531	10,521	10,853	3.2	2.7
Montana	694	741	783	793	1.3	1.3
Idaho	713	805	894	917	2.6	2.5
Wyoming	332	370	438	462	5.5	3.3
Colorado	2,210	2,531	2,740	2,816	2.8	2.4
New Mexico	1,017	1,133	1,228	1,255	2.2	2.1
Arizona	1,775	2,178	2,412	2,495	3.4	3.4
Utah	1,059	1,192	1,342	1,394	3.9	2.7
Nevada	489	582	684	722	5.6	3.9
Pacific	26,548	28,095	30,177	30,817	2.1	1.5
Washington	3,413	3,533	3,860	3,997	3.5	1.6
Oregon	2,092	2,272	2,490	2,570	3.2	2.1
California	19,971	21,068	22,509	22,925	1.8	1.4
Alaska	303	361	409	405	— 1.0	2.9
Hawaii	770	861	909	920	1.2	1.8

*Based on rounded estimates. Minus sign (—) denotes decrease.

†Geometric average annual rate.

Note: Figures for divisions and states exclude population of the Armed Forces overseas. Figures have been independently rounded; hence, totals may not equal the sum of the parts.

Source: 1970 resident data from the Decennial Census with reported corrections through October 1979; all other figures compiled by the Statistical Bureau of the Metropolitan Life Insurance Company from data of the Bureau of the Census and the National Center for Health Statistics.

Population Growth in the United States and Canada

Both the United States and Canada continued to gain population during 1979, and at much the same rate of growth. During the year the United States population (including the Armed Forces overseas) increased by 2,020,000, or by 0.92 percent, to reach a total of 221,719,000 on January 1, 1980. This increment was somewhat higher than the 0.84 percent recorded in 1978. In Canada, a population gain of 221,000 in 1979 brought the total population to 23,810,000 by the end of the year. The growth rate of 0.94 percent in Canada was slightly higher than the rate of 0.85 percent registered in 1978.

The increased rate of population growth in the United States during 1979 was due largely to a higher level of natural increase—the excess of births over deaths—which amounted to 1,567,000 in 1979. The rate of natural increase in 1979 was 7.1 persons per 1,000 population—the net result of a rise in the birth rate and a decrease in the death rate—compared with 6.5 per 1,000 in 1978. The United States also gained about 462,000 persons through migration during 1979, compared with 343,000 during 1978.

There were an estimated 3,473,000 live births in 1979, compared with 3,333,279 in the previous year, and 3,326,632 in 1977. The birth rate increased from 15.3 per 1,000 population in 1978 to 15.8 per 1,000 in 1979. The increase in births was attributed to a rise in fertility level, as well as an increase in the number of women of childbearing age.

There were about 1,906,000 deaths in the United States in 1979, a slight decrease from the 1,924,000 deaths the year before. The crude death rate declined from 8.8 per 1,000 population in 1978 to an all-time low of 8.7 per 1,000 in 1979, despite the continued aging of the population. Significant progress has been made recently in reducing mortality in the first year of life. The infant mortality rate continued its downward trend, dropping to 13.0 deaths per 1,000 live births in 1979. Life expectancy at birth increased by 0.5 years and reached a new high of 73.8 years in 1979 (according to a provisional life table prepared by the Statistical Bureau of Metropolitan Life). The decline in mortality from the major cardiovascular diseases (about 3 percent) in 1979 contributed to the improvement in life expectancy.

Population growth during 1979 was most rapid in the South and the West and below the national average in the Northeast and North Central regions. As shown in Table 1, the Mountain States had the highest rate of growth in the country (3.2 percent), while the South Atlantic and East South Central geographic divisions grew at about the same pace as the nation as a whole. The population growth rate was below the national average in the New England, East North Central, and West North Central States, but only the Middle Atlantic States registered a decline in population.

When compared with the average growth rates for the 1970-80 period, population growth rates during 1979 were higher in the West South Central, Mountain, and Pacific divisions. The growth rate in 1979 was lower than the 10-year average in the South Atlantic States and in some of the New England States. There was little difference

TABLE 2—POPULATION OF CANADA BY PROVINCE, 1970 TO 1980

Province	Numbers in Thousands				Annual Percent Increase*	
	January 1 1970	June 1 1976	January 1 1979	January 1 1980	During 1979	1970 to 1980†
Canada	21,182	22,993	23,589	23,810	0.9	1.2
Newfoundland	516	558	573	577	.7	1.1
Prince Edward Island	110	118	123	124	.8	1.2
Nova Scotia	779	829	846	851	.6	.9
New Brunswick	625	677	699	705	.9	1.2
Quebec	6,002	6,234	6,273	6,288	.2	.5
Ontario	7,488	8,264	8,480	8,543	.7	1.3
Manitoba	979	1,022	1,031	1,026	— .5	.5
Saskatchewan	948	921	954	965	1.2	.2
Alberta	1,579	1,838	1,990	2,053	3.2	2.6
British Columbia	2,107	2,467	2,557	2,612	2.2	2.1
Yukon and Northwest Territories	49	64	65	65	—	2.8

*Based on rounded estimates. Minus sign (—) denotes decrease.
†Geometric average annual rate.
Note: Figures have been independently rounded; hence, totals may not equal the sum of the parts.
Source of basic data: Reports of Statistics Canada.

in rates in the East North Central and West North Central divisions. In the Middle Atlantic States, the rate of population decline in 1979 was more pronounced than the 10-year average, due largely to the continued population loss in New York State.

California, the most populous state in the nation, recorded the largest numerical growth (416,000) in 1979, raising its resident population to more than 22,900,000. Significant population increases also occurred in Texas (336,000) and Florida (219,000). New York, the second most heavily populated state, lost 122,000 residents in 1979; there were 17,579,000 New Yorkers by year end.

Nevada had the highest population growth rate, 5.6 percent, followed closely by Wyoming with a 5.5-percent increase. The District of Columbia had the greatest decline, 2.7 percent, in 1979. Although several states experienced some decrease in population, only Alaska had an appreciable rate of decline—1.0 percent. The growth rates in New Hampshire, Vermont, Texas and Florida were relatively high in comparison with those of other states in the same division, while population decreases in Rhode Island, South Dakota, Mississippi, and Alaska were atypical for their respective areas.

There was only a slight increase in the population of Canada in 1979, continuing the trend of lessened population growth in Canada in recent years. A lower rate of net immigration prevailed in 1979 than in some earlier years. In addition, the number of births declined from 358,852 in 1978 to an estimated 357,590 in 1979, while the birth rate fell from 15.3 to 15.1 per 1,000 live births. With about 170,580 deaths last year, the death rate remained unchanged at 7.2 per 1,000 population for the third year in succession.

Alberta and British Columbia continued to lead in population growth in 1979, accounting for more than 50 percent of the total population increase in Canada. The unusually high rate of natural increase in Alberta continued to contribute substantially to the population growth rate in that province. All other provinces had moderate population growth, with the exception of Manitoba and the Yukon and Northwest Territories.

Ontario—the most heavily populated province—gained about 63,000 residents in 1979, bringing its total population to 8,543,000. Quebec, the second most populous province, added just about 15,000 inhabitants, reaching a residential population of 6,288,000 by the end of the year.

CURRENT MORTALITY REPORT

Standard Ordinary Policyholders, Metropolitan Life Insurance Company and United States Population

1979 Compared with 1978 and 1974-78

Cause of Death (8th Revision)	Death Rate per 100,000 in 1979	1979 Death Rate as Percent of that in 1978	1974-78
METROPOLITAN LIFE INSURANCE COMPANY STANDARD ORDINARY POLICYHOLDERS*			
All Causes	687.9	94%	92%
Major cardiovascular diseases	335.6	93	89
Diseases of heart	271.1	93	89
Ischemic and related heart disease	237.1	92	87
Cerebrovascular diseases	46.0	95	83
Cancer, all forms	184.6	97	98
Respiratory	51.3	100	104
Digestive	46.7	96	95
Accidents, all forms	31.2	97	97
Motor vehicle	16.1	101	106
Influenza and pneumonia	12.8	80	88
Cirrhosis of liver	9.9	87	78
Diabetes mellitus	9.4	83	77
Suicide	9.4	96	95
Bronchitis, emphysema and asthma†	7.6	81	68
Homicide	4.2	116	99
Cause of Death (9th Revision)			
UNITED STATES GENERAL POPULATION			
All Causes	866.2	98%	97%
Major cardiovascular diseases	431.6	98	95
Diseases of heart	330.4	99	98
Ischemic and related heart disease	251.9	‡	‡
Cerebrovascular diseases	76.5	97	87
Malignant neoplasms	183.5	101	104
Accidents and adverse effects	47.0	95	97
Motor vehicle accidents	23.6	96	104
Chronic obstructive pulmonary diseases and allied conditions	22.7	‡	‡
Pneumonia and influenza	20.0	75	76
Diabetes mellitus	15.0	100	93
Chronic liver disease and cirrhosis	13.5	99	92
Suicide	11.7	93	93
Homicide and legal intervention	10.0	103	104

*Death rates for 1978 and 1974-78 are adjusted to correspond to the age and sex distribution of the Standard Ordinary policyholders in 1979.

†Decrease is an artifact of medical certification rather than a real reduction in mortality.

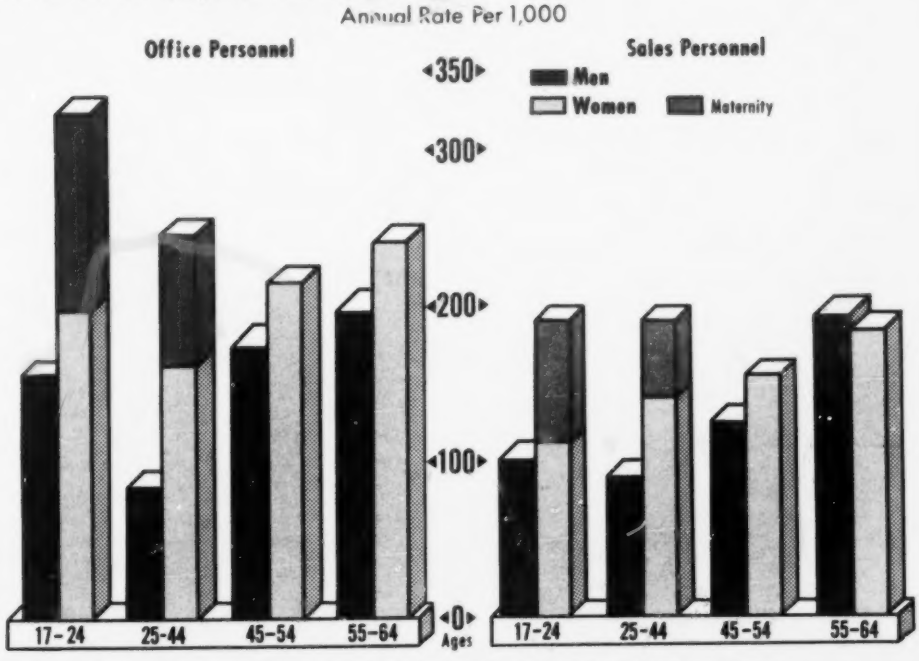
‡Not computed because changes due to the 9th Revision of cause of death coding procedures have significantly affected the comparability between death rates for these causes in 1979 and those for 1974 to 1978.

Note: The experience among policyholders is not strictly comparable with that in the general population because of (i) the effects of risk selection and (ii) differences in composition by age, sex, occupation, etc. In addition, in 1979, deaths in the general population were coded according to the 9th Revision of the International Classification of Diseases while deaths among policyholders were still coded according to the 8th Revision.

Source of basic data: Standard Ordinary policyholders—Claims paid in the period indicated. General population—Reports of the Division of Vital Statistics, National Center for Health Statistics. Death rates are provisional.

Incidence of Disability–1979

Personnel of the Metropolitan Life Insurance Company



Disability lasting longer than a week. Personnel in the Pacific Coast States and Canada are not included.

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Congressional Information Service
7101 Wisconsin Avenue
Washington
DC 20014

Metropolitan Life
One Madison Avenue
New York, N.Y. 10010

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